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SL 11 NC 1/1

Time: 6:32 a.m. CDT, 8-01:23:00 CDT
8/23/73

PAO This is Skylab Launch Control T minus 1 hour 23 minutes and counting. Just completed at the T minus 1 hour and 30 minute mark were a simulated first motion signal test. During this test the simulated signal indicating first motion is sent to the Eastern Test Range and also to the Mission Control Center in Houston. During the actual lift-off this first motion signal starts the countdown clock in the plus time at those two areas. Recently completed were checks of the emergency detection system. This is a system that is designed to sense and react to any emergency situation resulting from a launch vehicle malfunction during the early portion of the powered flight. During most of the first stage flight the EDS, as it's called, provides the capability for automatically aborting the mission. The auto abort system is turned on at lift-off and disabled by the crew about 2 minutes into the flight. The system senses such things as loss of thrust in first stage engines or excessive rates in pitch or yaw. The test takes about 30 minutes, it's conducted with the spacecraft commander, Pete Conrad, and the launch vehicle people here in the firing room. During the test, simulated emergency conditions are sent to the vehicle and lights in the spacecraft light indicating what the nature of the emergency is. We have one more hold planned in the countdown, that's at the T minus 15 minute mark. Nominally that will be for 2 minutes duration. At that time the clock will be updated to correspond with the orbiting Skylab overhead. The close out crew at the white room area is securing now for their cabin purge and leak checks. Everything continues to move along smoothly there. Now for a status report from the Mission Control we go to Houston.

PAO This is Skylab Control at Houston at minus 1 hour 24 minutes and continuing with the count. In the Mission Control Center two teams of flight controllers now on station at their consoles proceeding toward the launch of Skylab 2. The crimson team of flight controllers headed by Flight Director Don Puddy managing the orbital workshop systems, and the purple team headed by Flight Director Phil Shaffer, which will be in control for the manned launch and rendezvous phase of the flight. The Saturn workshop is presently in an orbit of 239 nautical miles by 234 nautical miles. An average workshop cabin temperature now reading 120 degrees. At the time of ignition, the workshop will have passed directly overhead and should be approximately 780 nautical miles down-range at the time of ignition. Flight Dynamics advises that Skylab 2 will be launched with an azimuth of 47.58 degrees. CAPCOM for our launch will be Astronaut Dick Truly. We're at 1 hour 23 minutes, continuing with the count at Mission Control Houston, this is Skylab Control.

END OF TAPE

SL-11 MC2/1

Time: 07:02 a.m. CDT, T-00:55:00 GET

5/25/73

PAO This is Skylab Launch Control we're at T minus 55 minutes and counting. T minus 55 and counting in the first manned mission in the Skylab program. The closeout crew at the pad is now clearing the pad area. Before leaving, the pad leader confirmed that the white room area had been completely secured, all loose equipment removed and stowed and the tool and supply cabinet secured. There is an environmental control hood which attaches between the white room area and the spacecraft. That's also now been secured. He reported back that the white room now ready for swing arm retract. This will happen at the T minus 45 minute mark in the countdown and actually the swing arm will come back to what is called the 12 degree position. This is the standby or park position. And it will remain there until the final minutes in the launch. At T minus 5 minutes it will swing back to the fully retracted position. Also underway at this time the superintendent of range operations calling in to Bill Schick the Test Supervisor indicating that the launch danger area has been declared clear for a launch. In the spacecraft itself pilot of the mission, Paul Weitz been working with ground controllers on spacecraft communications frequency and power readouts. Weitz selected as an astronaut in 1966 was a member of the astronaut support crew for Apollo 12. That Apollo 12 mission also commanded by Pete Conrad. Weitz holds a degree in aeronautical engineering. He's a Commander in the Navy with approximately 4000 hours of flying time. Our weather at this time is generally cloudy in the launch area, however, some of that cloud is expected to dissipate during the next hour. For launch time the weather men are predicting broken clouds. These will be in several layers. The tops of the upper layers expected to be about 15,000 feet and the base of the lower layer is about 6,000 feet. Winds at launch time are expected to be approximately 10 knots from the southwest and the temperature about 78 degrees Fahrenheit. Closeout crew now cleared the area. T minus 53 minutes 40 seconds and counting this is Kennedy Launch Control.

END OF TAPE

SL-11 MC3/1

Time: 07:13 a.m. CDT, T-00:43:00 GMT

5/25/73

PAO This is Skylab Launch Control; we're at T minus 45 minutes and counting. We'll expect the swing arm to be retracted shortly. Mark there comes the swing arm, moving back to the park position; this is a 12 degree park position, approximately 10 to 15 feet from the vehicle. It will remain there now until approximately 5 minutes in the countdown, and at that time it will be moved back to the full retract position. Also underway at this time are interrogations of the C-band beacons. These are two beacons aboard the instrument unit of the vehicle. During this test there are simply checked, the beacons are checked to insure that they are being tracked and will be tracked during the powered phase of flight. During powered flight the beacons give position data as well as speed and acceleration. Now that the swing arm has come back, the launch escape system atop the command module will be armed. Stoney, Astronaut Bob Crippen, will position the mobile launcher elevator at the 320-foot level in what is called the egress mode. The - Bob Crippen is the Astronaut communicator name that is called, he is called Stoney, will be in the Launch Control Center. Crippen was also a member of the crew which entered the altitude chamber for the Medical Experiments Altitude Test, 56-day test run in Houston last July. A short time from now we expect the science pilot, Joseph Kerwin. We'll begin arming the service module reaction control system. To do this, he actually opens valves and allows the hypergolic fuels to flow down through the lines down to the engines. The countdown has proceeded very smoothly this morning. Now at T minus 43 minutes 4 seconds and counting, this is Kennedy Launch Control.

END OF TAPE

SL-11 MCA/1

Time: 07:30 a.m. CDT, T-00:27:00 GET
5/25/73

PAO This is Skylab Launch Control. T-27 minutes 59 seconds and counting. Preflight command system tests for the mission control center in Houston have just been completed. Also just completed at this time was a final level adjustment of RPl, the fuel used in the first stage. RPl is actually loaded prior to the countdown demonstration test and replenished last night before cryogenic loading. This level adjustment made here during the final hour of the count is necessary to take into account temperature and humidity and to assure us a full flight load. Cryogenic loading of course, also completed earlier this morning and topping continues. The astronaut crew completing their preflight check list in the command module at this time. Now we'll switch to Houston for a status from the Mission Control Center.

PAO This is Skylab Control Houston at -27 minutes and counting. Flight director Don Puddy of the workshop team is going around the Horn with his team in the mission control center for a GO/NO GO for Skylab launch based on orbital workshop data. Given a GO at this time for the launch of Skylab II. The workshop is now passed out of range of the Honeysuckle tracking station. The next station to acquire will be Texas on this the 156 revolution. Meanwhile the Shaffer team of flight controllers has been given a GO for the start of the terminal count which is now in progress. The displays of mission control center in Houston now selected for the launch of Skylab II. At -26 minutes and continuing with the count, this is Skylab Control Houston.

END OF TAPE

SL II MC 5/1

Time: 7:36 a.m. CDT, T-00:21:59 GET

5/25/73

PAO

This is Skylab Launch Control passing the T minus 22 minute mark in the countdown for the first manned mission in Skylab. Science Pilot Joseph Kerwin at this time reading out temperatures, pressures, and quantities in the service module reaction control system quadrant. Cryogenic fuels aboard the launch vehicle continue to be topped. We have one more hold as we aim toward our 9:00 a.m. lift-off. That's a nominally 2 minute hold and we're coming to the T minus 15 minute mark. Our countdown continuing to go smoothly at this time, T minus 21 minutes 30 seconds and counting, this is Kennedy Launch Control.

END OF TAPE

SL-11 NC6/1

Time: 07:42 a.m. CDT, T-15 min GMT
5/25/73

PAO This is Skylab Launch Control we're now at the 15 minute mark in the count, T minus 15 minutes and holding this is a planned hold period nominally for 2 minutes. It's a final clock adjustment to assure lift-off at the proper time in conjunction with the orbiting Skylab overhead. Interrogation of radar beacon number 1 has just been completed. When we come out of this hold at the T minus 15 minute mark the spacecraft will go to full internal power. Actually the fuel cells have been supporting the spacecraft at this time but they have also had a backup of ground support power. In the command module the crew completing their checks. They actually on their display panels have some 24 instruments, 566 switches, 40 event indicators and over 70 lights. Inside the command module they have approximately 70 cubic feet per man. This is a little larger. A little more room than one would have in a compact car. Once they get into Skylab, however, that will change considerably. They will actually have about 59 times the volume in Skylab that they have to work in in the command module. At this time Stony, the astronaut communicator Bob Crippen here in the Launch Control Center, the Launch Operations Manager, Paul Donnelly and the Spacecraft Test Conductor, Bob Reed have switched to the astro launch circuit for communications checks. This is the circuit which will be used by the astronaut crew and these members at launch time. When he came aboard this morning Astronaut Pete Conrad commented that he hoped the launch team planned to blow the clouds away by 9 a.m. The clouds, in fact, are breaking up somewhat at this time. Bob Reed, the Spacecraft Test Conductor, indicated that if the clouds weren't all blown away he was sure that they would do it as they lifted off. We're preparing to pick up the countdown now. Mark T minus 15 minutes and counting. This is Kennedy Launch Control.

END OF TAPE

SL-11 MC7/1

Time: 7:47 a.m. CDT, T-00:10 GMT

5/25/73

PAO The crew now making some quick voice checks on their Astrocom circuit. Cryogenic topping continues. Swing arm number 9 in the standby position. It will be moved back to the full retract at T-5 minutes. Now T-10 minutes 42 seconds and counting. This is Kennedy Launch Control.

END OF TAPE

SL-II MCB/1

Time: 7:49 a.m. CDT, T-9 min GET
5/25/73

PAO This is Skylab Launch Control crew finishing up now in their checks on communications. Launch Operations Manager Paul Donnelly wishing the crew good luck, God's speed and good sailing. Now T minus 9 minutes 47 seconds and counting this is Kennedy Launch Control.

END OF TAPE

SL-11 MC9/1

Time: 7:54 a.m. CDT, T-7 min GET
5/25/73

PAO This is Skylab Launch Control we're passing the 6 minute mark in the countdown now. Various personnel now reporting in to the spacecraft test supervisor Bill Schick that they are ready and GO for launch. Bob Reed the spacecraft test conductor has indicated that the spacecraft is GO. Launch operations manager Paul Donnelly reports GO and the director of launch operations Walter Lapryan also has reported GO for a launch. Final computer programs are now being run to place the launch vehicle in a launch mode. In the spacecraft the final action to be taken there will be at the T minus 4 minute mark. Paul Weitz will turn on the spacecraft batteries and at T minus 45 seconds, the last action to be taken by the crew will be taken by Pete Conrad when he makes a final guidance alignment. We're coming up now to the 5 minute mark. At that time the swing arm, swing arm number 9 will come back to the full retrack position. Actually for the Saturn-1B there are only 5 swing arms. The number 9 designation comes from the earlier launches using this same mobile launcher, using the Saturn-V. Swing arm now coming back to the full retrack position. It will remain in that full retrack position now for the rest of the countdown. At T minus 3 minutes and 7 seconds the count will go on the automatic sequencer and will be carried out automatically from that time on. Now at T minus 4 minus 39 seconds and counting this is Kennedy Launch Control.

END OF TAPE

SL-11 MC-10/1

Time: 7:57 a.m. CDT, T-3 min GET

5/29/73

PAO This is Skylab Launch Control. The launch sequence has started. We're now on the automatic sequencer, and the countdown will be run now by that automatic sequencer. The number of functions are carried out by the sequencer, and they must be carried out in the proper order, or they would be automatically shut down. Also, at the same time, the launch crew here in the firing room will continue to monitor their various readout temperatures, checking the gages for pressures and rates. They could override the sequencer if necessary. At the T-3 minute and 6 second mark, the automatic sequencer terminated the liquid oxygen and liquid hydrogen replenishing. These cryogenic fuels have been being replenished since fueling was actually completed early this morning. After this termination the fuel tanks will be pressurized. Actually pressurization has now started. The second stage liquid oxygen tank has now been pressurized, and the first stage fuel tank also has been pressurized. Now passing the 2 minute mark in the countdown. The vents closing and the pressurization is taking place on the 2 stages of the Saturn IV. At the T-1 minute 15 second mark, Paul Weitz will trip two switches in the command module, placing the spacecraft batteries on line. These batteries will give added support to the fuel cells and also act as a backup to the fuel cells. Fuel cells also on line at this time. T-1 minute 30 seconds and counting. Our countdown continues to go smoothly. Also during the automatic sequence we'll switch to internal power. We've been carrying the power from a ground source up to this point to save on the flight batteries. At T-50 seconds in the count, we'll switch to internal power and stay on internal power for the remainder of the count. We are approaching the 1 minute mark in our countdown. MARK T--

END OF TAPE

LAUNCH ST. II

SL-11 NC-11/1

Time 08:01 a.m. CDT, T-1 min GET

9/23/72

PAO Countdown MARK; T-1 min., 1 minute and counting in the launch of the first manned mission in Skylab. T-50 seconds, T minus 50 seconds, and counting. And we are now going to internal power, all stages switching to internal power, stages now and fuel tanks pressurized. Approaching the 30-second mark in countdown. At 30 seconds water will begin spraying on the deck of the mobil launcher. T minus 30 seconds, and the countdown continuing to go smoothly. The Skylab, itself, orbiting some 780 nautical miles northeast of KSC, at this time. T-17 seconds and counting, T-15. At T-3.1 second we'll expect the engine sequence to start on the vehicle. T-7, 6, 5, 4, 3, engine sequence start, 2, 1, 0. We have launch commit and we have lift-off. The clock is running and Skylab has cleared the tower.

SC Tower and Houston, Skylab 11, we fix anything, we've got a pitch and a roll program.

PAO Houston is now controlling.

CC The thrust is going all engines.

SC Boy, is that a smooth ride.

PAO " Twenty five seconds pitch and roll program started. Skylab now maneuvering to its proper flight path attitude. MARK 35 seconds, 1 nautical mile in altitude. Given a green by-range safety. MARK 45 seconds, cabin pressure relieving, adjusting now from sea level to a space environment. MARK 50 seconds, 2 nautical miles in altitude.

SC And roll is complete, Houston.

CC Roger. Standby for mode-1 BRAVO. MARK,

1 BRAVO.

SC Roger. Propellant ... as RCS ...

CC Roger.

PAO MARK, 1 minute 8 seconds roll program completed.

CC Skylab, Houston, you're feet wet.

SC Roger, feet wet.

PAO That call out from Capcom Dick Truly, says Skylab, now, capable of water landing. One minute, 20 seconds, passing through the period of maximum aerodynamic pressure on the vehicle. One minute 25 seconds, 8 nautical miles in altitude. MARK, 1 minute 35 seconds pass through MAX Q, Skylab still flying steady on all 8 engines.

SC JEDS (garble) engine, launch vehicle rates are all off.

CC Roger, stand by for mode 1 Charlie. MARK,

your 1 mode, Charlie.

SC 1 Charlie.

SL-11 NC-11/2

Time: 08:01 a.m. CDT, T-1 min GET

5/25/73

PAO The status check in mission control by
Flight Director Phil Shaffer, a GO no GO for staging. Given
a GO, for staging.

CC You're GO for staging, you're looking
good.

PAO MARK, 2 minutes, 6 seconds, 21 nautical
miles in altitude, 20 nautical miles downrange, velocity now
reading, 5947 feet per second. Coming up now on staging and
shutdown.

PAO Center engine shutdown. Seven outboards
out.

SC All right, I've got an S-IVB light
Houston, and a nice staging.

CC Roger, that.

PAO MARK, 2 minutes, 35 seconds, staging on
schedule. Conrad, Weitz, Kerwin, now riding on a good second
stage engine. Coming up now a launch escape tower jettisons.

SC 4-B.

SC Tower jet on time.

CC Roger, tower jettison, you're mode 2.

PAO MARK, 3 minutes, 2 seconds, 47 nautical
miles in altitude. The launch escape tower now ejected,
reports Conrad, his crew safety roll no longer required.
Three minutes 12 seconds, 50 nautical miles in altitude, 34
nautical miles downrange. Velocity now reading 8200 feet per
second.

PAO 3 minutes, 25 seconds, the first stage in
launch escape tower both falling away now, headed for their
own splash down. Meanwhile, Conrad, Weitz, Kerwin, now at
58 nautical miles. The Skylab continuing to climb, moving out
well beyond the Earth's atmosphere.

SC Okay. Houston, the computer looks good
here.

CC Roger, we concur, CMC's go.

PAO 3 minutes 58 seconds, 66 nautical miles
in altitude, 140 nautical miles downrange.

CC Houston, looking good, GO at 4 minutes.

SC And we're GO, here, Houston.

PAO MARK, 4 minutes, 15 seconds, now at
71 nautical miles in altitude, 167 nautical miles down range.
Skylab's onboard performance continues smooth. Onboard
reading show, Conrad, Weitz, Kerwin with their computer in
program 11, the earth orbit insertion program, ticking off
their own altitude velocity. Velocity now reading, 9352 feet
per second. MARK, 4 minutes 40 seconds, 77 nautical miles in
altitude, at 199 nautical miles downrange. Flight Director
Phil Shaffer pulsing his flight team, looking good.

SL-11 MC-11/3

Time: 08:01 a.m. CDT, T-1 minute GZT

5/25/73

CC Skylab, Houston. You're GO in five minutes, set your trajectories right on the nominal.

SC And, we're go here, Houston, looks good in here.

CC Roger.

PAO MARK, 5 minutes, 10 seconds, 82 nautical miles in altitude, 244 nautical miles downrange. A trajectory data in mission control looking good. Skylab now threading the eye of the desired flight path orbit. We're at 5 minutes, 22 seconds, 11,326 feet per second, now traveling Skylab.

PAO MARK, 5 minutes 35 seconds. Skylab now 85 nautical miles in altitude. Skylab's climb for altitude now essentially complete, moving out now for downrange distance. Conrad, Weitz, Kerwin, now flying almost parallel to the Atlantic below in a heads down position. We show a down-range distance of 317 nautical miles.

CC Skylab, Houston, you can GO at 6 minutes.

SC Roger, we're GO up here.

CC Roger.

PAO MARK, 6 minutes, 10 seconds, that GO given by Capcom Dick Truly. Responding spacecraft commander Pete Conrad. We now show Skylab at 88 nautical miles in altitude, 362 nautical miles downrange.

SC (Garble), Houston. Standby to GIMBAL motors at 7.

CC Roger.

PAO MARK, 6 minutes 45 seconds, Skylab velocity building up now, now reading 14,538 feet per second. Conrad, Weitz, Kerwin, traveling almost parallel to the east coast of the United States, the most northerly powered flight in the space for astronauts thus far.

CC Skylab, Houston. We're go at 7 minutes.

SC Okay, Houston, good Gimbal motors, then we're GO at 7.

CC Roger, copy.

PAO MARK, 7 minutes, 2 seconds, 89 nautical miles in altitude, 522 nautical miles downrange now for Skylab, velocity now reading 15,709 feet per second.

SC Hey, do we just have - We just have PU shift, Houston?

CC Roger, we concur and you're GO at 8 minutes.

SC Okay.

PAO MARK, 8 minutes 10 seconds, a good propellant and utilization shift, says Booster Engineer, giving a change in fuel oxidizer ratio of - for more efficient engine performance in space. We show 87 nautical miles in altitude, 665 nautical miles downrange. Velocity now reads 19,605 feet per second.

SL-11 MC11/4

Time: 08:01 CDT, T-1 min GET

5/25/73

PAO Predicted time of shutdown, 9 minutes
49 seconds.
CC Skylab, Houston, we predict shutdown at
9 plus 49.
SC 9 plus 49. Understand.
CC That's affirm.
PAO Coming up on 9 minutes, we now show
Skylab at 85 nautical miles in altitude, 787 nautical miles
downrange.
CC Okay, we're GO here.
PAO 9 minutes 12 seconds. Skylab given a
GO for passage over Europe, range safety concurs.
CC Stand by for mode 3 Alfa.
CC MARK. You're mode 3 Alfa.
SC 3 Alfa.
CC Stand by for mode 4 capability.
CC MARK. You're mode 4.
SC Mode 4.
PAO Mark down is 35 seconds. That mode 4
callup from Dick Truly, says Skylab can reach orbit on
spacecraft power only, 83 nautical miles in altitude, 950
nautical miles downrange.
PAO Standing -
SC Good shutdo. Houston, 25 825.
CC Roger. Copy.
SC (Garble) 189.1 by 83.5.
CC Roger. Looks good. Stand by.
PAO 10 minutes, 10 seconds S-IVB shutdown
on time. Skylab now in orbit, that was an initial reading
from the onboard computer of 189 nautical miles by 83.5
nautical miles.

END OF TAPE

SL-II MC12/1

Time: 08:12 a.m. CDT, 10:00 CXT

5/25/73

PAO S-IVB shutdown on time. Skylab now in orbit. That was an initial reading from the onboard computer of 189 nautical miles by 83.5 nautical miles.

CC Skylab Houston we confirm you're GO for - you're in a nominal orbit and you're cleared for a nominal separation sequence.

SC Roger, Houston. Thank you.

PAO Skylab Control Houston, 12 minutes. The status check, GO/NO GO for separation, indicates we're GO for separation. This at 16 minutes ground elapsed time should be a burn of 3 feet per second.

PAO Skylab Control Houston at 14 minutes ground elapsed time. Early tracking data on the ground shows an orbit of 192 nautical miles by 83.5 nautical miles. This close to the prediction based on today's launch with current rendezvous conditions. Had we launched 10 days earlier the apogee would have been more than - approximately 70 miles lower.

PAO Skylab Control Houston 15 minutes ground elapsed time. Out of range now with Bermuda tracking. Less than 1 minute away now from predicted time of separation.

END OF TAPE

SL-II NC13/1

Time: 08:18 a.m. CDT, 00:15:00 GET

5/25/73

CC Skylab, Houston. Be advised we don't have a ARIA data, and could you give us an idea of how the separation went?

PAO Dick Truly trying to reach Skylab through an ARIA aircraft.

SC Also, Houston, it read about 2.3 feet per second on separation and about 3.4 on the CMC.

CC Roger; copy. 2.3 feet per second on the EMS; CMC read 3.4.

CC And Skylab; Houston. In the event you said anything prior to giving me those two numbers, I did not get it.

SC Okay, Houston (garble).

SC Hello, Houston. How do you read?

CC CDR, Houston. I read you now. How me?

SC Read you loud and clear. We got a good look at the booster, and you've got four perfectly deployed (garble) panels. No sweat.

CC Roger. Thank you much.

PAO Skylab Control Houston, 19 minutes ground elapsed time. That was Pete Conrad reporting the 4 SLA panels had deployed perfectly in the course of separation. Talking to Dick Truly, CAP COM here in mission control. 19 minutes of ground elapsed time. Less than a minute away now from acquisition by Madrid tracking. This is Skylab Control Houston.

CC And Skylab, Houston. We've got you AOS in Madrid now. How do you read?

CC Skylab, Houston. How do you read?

PAO CAP COM Dick Truly calling Skylab through Madrid.

SC Hello, Houston. You read the PLT?

CC PLT, Houston. I read you loud and clear. How me?

SC Roger. We've been reading you loud and clear. Apparently you are not reading the CDR.

CC Okay, I'm reading you loud and clear and be advised that the NC1 pad, the T-align pad, and the back-up - correction, the backup GDC align pad, the launch rendezvous realign pad, and the NC1 pad are all good. No update required.

SC Okay, all good. Did you get the dope on the separation from the SIV?

CC Paul, what I got was the two numbers. The 3 - the 2.3 and the 3.4 feet per second. I copied that the SLA panels are all deployed okay, and I didn't get anything else.

SL-11 MC13/2

Time: 08:18 a.m. CDT, 00:15:00 GET

5/25/72

SC (garble) we've just been watching it opening slowly here. You got a very stable SIV.

SC Okay, Houston. How do you read me, Houston? You read the CDR?

CC CDR, Houston. I read - that transmission loud and clear.

SC Okay. I guess we're coming up over Europe here. I never seen so many contrails in my life down there.

CC I trust you're higher than all of them.

SC I hope so.

CC Skylab, Houston. We're about 1 minute from LOS and Madrid, and we'll see you at the ARJA at 52.

SC Okay, Houston. And be advised we're just climbing slowly above the SIVB out in front of me and he's very stable. And it's no sweat on those SLA panels.

CC Roger; copy. Thank you.

SC And do you read, Houston?

CC Affirmative. Go ahead.

SC Okay, we're just dumping the cabin to four now.

CC Roger; copy.

PAO Skylab Control Houston. 24 minutes ground elapsed time. We've had loss of signal with Skylab on this first pass over the Madrid tracking station. Next station to acquire will be Carnarvon some 28 minutes from this time. During our pass over Madrid we heard CAP COM Dick Truly speaking with spacecraft commander, Pete Conrad, and spacecraft pilot, Paul Weitz. We're at 25 minutes ground elapsed time. This is Skylab Control Houston.

END OF TAPE

SL-11 MC14/1

Time: 08:31 a.m. CDT, 00:15:00 GRT

5/25/73

PAO This is Skylab Control Houston at 51 minutes ground elapsed time, less than a minute away now from predicted time of acquisition, voice acquisition that is, with an ARIA aircraft leading into a station contact with Carnarvon. We presently show tracking data on Skylab giving an orbit of 194.3 nautical miles by 83.6 nautical miles. Current velocity 25,242 feet per second. We've just had AOS with ARIA. We'll stand by.

CC Skylab, Houston through the ARIA. How do you read?

CC Skylab, Houston through the ARIA. For GARBLE minutes how do you read?

SC Okay, Houston, are you talking through the ARIA or Carnarvon?

CC We're uplinking through ARIA, Pete.

SC You're breaking up, Houston.

CC Roger, CDR. I hear a lot of static also and we are uplinking through ARIA.

SC We read you loud and clear. We're on the GARBLE to see what GARBLE.

CC Roger, Pete. I can hear you transmitting, but I just can't make it out. You're kind of garbled.

SC Okay, Houston. I said I read you now. We're on the timeline (garble) (static) at Carnarvon.

CC Roger. We can hear and understand you now.

PAO Skylab Control Houston 53 minutes ground elapsed time. Very ragged comm at this time with ARIA. We'll stand by for acquisition with Carnarvon momentarily. The only anticipated task on the part of the crew during this pass will be a program 52. That's a platform alignment of the onboard guidance and navigation system. Fifty-four minutes ground elapsed time, Skylab Control continue to monitor.

CC Skylab, Houston. How do you read now?

PAO That's CAP COM Dick Truly placing the call 55 minutes ground elapsed time.

PAO The guidance officer confirms and, looking at his display in mission control, that program 52 of the platform alignment has been accomplished.

SC Houston, we read you loud and clear. How me?

CC Roger. Loud and clear now, Pete. And I'm standing by for the data.

SC Okay. Our first P52 was with ... 25 and 33. The Doctor did a magnificent job with the NOUN ... 5 of five balls working at the - the ... were minus 00010 plus 00071 plus 00056. The time 50:00. We have just completed P52 option 2. The stars were 25 and 33. Again the Doctor

SL-11 MC14/2

Time: 08:51 a.m. CDT, 00:51:00 GET
5/25/73

did his usual magnificent job, and he has the five balls again. ... the NOUN 93's were plus 00060, plus 00075, plus 00059. The time 54:30. And it looks like we're right on the timeline.

CC Hey, very good, Pete. Sounds good. Incidentally we think the little comm problem we had with you back there in Madrid was a ground problem; so we think your systems are all okay.

SC Okay and the PLT has a few words for you
GARBLE.

CC Roger. Go ahead PLT.

SC Okay, Dick, the only thing was we pumped the primary glycol accumulator up to about 50 percent. By putting the radiators back on the line, apparently one of them needed some fluid, because the glycol (static)

CC PLT, Houston. You dropped out right after you said, "after you put the radiator back on the line. what happened?"

PAO Skylab Control Houston, 58 minutes ground elapsed time. We appear to have had loss of signal with Carnarvon at this time.

CC Skylab, Houston. How do you read through the ARIA?

CC Skylab, Houston. We're through the ARIA. How do you read?

SC We read you through the ARIA (static)
(inaudible).

CC CDR, Houston. That transmission I copied that you read me - you were very garbled. Would you try again once more, please.

SC Okay, Houston, how do you read? 1, 2, 3, 4, 5, 5, 4, 3, 2, 1.

CC Roger, CDR. That time I copied you weak but clear. This comm through this pass though is very bad. Be advised we expect AOS at Texas at about 1 plus 34.

SC Okay. We'll see you then.

CC And Skylab; Houston. One little comment we had on the waste water dump checklist that you may be in now. In the event any time that you do happen to dump through zero, down to zero, if you do, we'd like you to deactivate the evaporator for about 30 minutes.

SC Okay. I'll do that.

CC Okay. Good.

CC Go ahead. Go ahead.

PAO This is Skylab Control Houston at 1 hour 2 minutes ground elapsed time. We expect no further communications with the crew aboard Skylab until our next acquisition over Texas. Meanwhile, an early look at our rendezvous evaluation gives us the following numbers. The NCI phasing burn

SL-11 MC14/3

Time: 08:51 a.m. CDT, 00:51:00 GET
5/25/73

at 2 hours 23 minutes 35 seconds ground elapsed time with a DELTA V of 207 feet per second, resulting orbit of 201 nautical miles by 194 nautical miles. The NC2 phasing burn at 4 hours, 41 minutes, 17 seconds with a DELTA V of 42 feet per second, resulting orbit 219 nautical miles by 201 nautical miles. The NCC corrective combination burn at 5 hours 27 minutes 23 seconds. Present planned DELTA V of 38 feet per second. Resulting orbit 224 nautical miles by 219 nautical miles. The NSR coelliptic burn at 6 hours 4 minutes 23 seconds as presently planned with a DELTA V of 19 feet per second, resulting orbit 229 nautical miles by 224 nautical miles. The TPI or terminal phase initiation maneuver at 7 hours 2 minutes and 55 seconds with a DELTA V of 21 feet per second, resulting orbit 235 nautical miles by 228 nautical miles. The TPF maneuver or terminal phase finalization, presently planned at 7 hours 36 minutes 34 seconds with a DELTA V of 29 feet per second, resulting orbit 239 nautical miles by 234 nautical miles. We will update these numbers as the evaluation becomes more refined. We're at 1 hour 4 minutes ground elapsed time and we will switch to the Kennedy Space Center for the Post Launch News Conference.

END OF TAPE

SL-II MC15/1

Time: 09:32 a.m. CDT, 1:32:17 GET
5/25/73

PAO Skylab Control, Houston, at 1 hour, 32 minutes ground elapsed time, less than a minute away, now, from acquisition of Skylab through the Texas Tracking Station. Meanwhile, the surgeon advises us of the following heart rates at liftoff. For spacecraft Commander Pete Conrad, the heart rate 103, for Pilot Paul Weitz, a heart rate of 135, and for Science Pilot, Dr. Joe Kerwin, a heart rate of 90. During this at-a-side pass, we expect the NCC-1 phasing maneuver preliminary pad to be passed to the crew aboard Skylab. We've had acquisition with Texas.

PAO The NC-1 - -
CC Skylab, Houston. We're AOS at Texas for 5 minutes.
CC Skylab, Houston. How do you read?
PAO That's CAP COM Dick Truly placing the call up. We've not yet heard from the Skylab Crew. However, we're receiving good spacecraft data.
CC Skylab, Houston. How do you read?
SC Houston, we read you loud and clear. How us?

CC Loud and clear, Pete. Be advised, we do not need the P-52, and I've got a couple of pads, and before the pass is over, we'd like for the PLT to amplify the remarks on the primary glycol accumulator. We've still got about 4 minutes in this pass.

SC Okay. Go ahead with your pads
CC Okay. Here's an NC-1 preliminary pad, page 1-5.

SC Go ahead.
CC 002 23 3014 plus 2074 plus all 0s, plus all 0s, 180 009 002 1940 0009, the weight is 30852, pitch trim plus 107, plus 035. Go ahead.

CC And, Skylab, Houston. We'd like you to stop the cabin repress, we're high enough.

SC Okay, that's what Joe was crawling all over me and I was batting him away.

CC (Laughter) okay. And I'm standing by for a readback.

SC Okay. 002 23 3014 plus 2074, plus all balls, plus all balls, plus 180 009 002 1940 0009, 30852, plus 107, plus .35.

CC That's affirm, and the burn attitude check, in Star 33.

SC Star 33.

CC Rog. Shaft is 0740, Trunion 258. This'll be a dual bank SPS burn. And be advised, there's no plane change required.

SL-11 MC-15/2

Time: 09:32 a.m. CDT, 1:32:17 GET

5/25/73

SC Whoopee.
CC And, I've got a Star acquisition pad for
you on page 1-Alfa.
SC Go ahead.
CC Roger.
CC Star 25 22 83 292 33 0740 258, go ahead.
SC Star 25 is 22 83 292, Star 33 0740 and 258.
CC Roger. You got that right. We're about
1 minute from LOS in Texas. We're going to have a short
break and then we'll see you at Newfoundland VHF for once
only.
SC Okay. Also, be advised, Houston, we've
read about your first 5 calls, Dick, and you weren't reading
us getting for some reason.
CC Roger, understand.
SC I'll talk to you about the ECS at New
Foundland, just two things of general interest, we're having
a whole lot of fun with all this brown cord up here, and
secondly we can see the S-IVB out ahead of us and it really
makes a plume when it vents.
CC Roger, Copy.
SC I guess we're coming up on the Mississippi
River right now, I can still see a lot of flooding down there
and everything.
CC Roger, understand.
SC Okay, lock. We're on the time line,
except for one thing, we have not gotten to the waste water
vent, because of the (garble) in front of the panel and that
is what we are reconfiguring right now, (Chuckle) and Dr.
Kerwin is wrestling the big pivot - -
PAO Skylab Control, Houston at 1 hour,
40 minutes ground elapsed time. We've had loss of signal over
Texas, our next station to acquire, Newfoundland. Meanwhile,
the NCC-1 preliminary maneuver pad was passed to the crew
aboard Skylab. This calls for a burn at 2 hours, 23 minutes,
30 seconds ground elapsed time, with a Delta-V of 207.4 feet
per second, the duration of the burn, 9 seconds. The resulting
orbit should read, 201.3 nautical miles by 194.2 nautical
miles. This maneuver will be performed outside of station
contact. We're at 1 hour 40 minutes ground elapsed time,
continuing to monitor, this is Skylab Control, Houston.

END OF TAPE

SL-II MC16/1

Time: 09:42 a.m. CDT, 1:42:00 GET

5/25/73

PAO Skylab Control Houston, 1 hour 42 minutes ground elapsed time. Less than a minute away now from acquisition by Newfoundland tracking.

CC Skylab Houston through Newfoundland how do you read?

CC Skylab Houston through Newfoundland VHF how do you read?

SC GARBLE.

CC I heard you just a second, Pete, try again.

SC How do you read me?

CC Roger. You're dropping down in strength but I think I can copy it and we're looking for EMS delta V tests results if you've got them for us.

SC Okay. I have a note right here to give them to you. Our bias was plus 1.2 feet per second and 1 minute and 40 seconds. GARBLE went from minus 100 minus 98.8. In pad D. Other check just fine. On the long burn it looks like we'll bias at 2-1/2 feet per second.

CC Roger. Pete. Would you repeat that - would you say that last again please.

SC I say it looks like we need to bias our big burn but it won't make any difference. Break on that one. We had a good BMAG 2 drift check. If you're ready to copy the numbers I'll give them to you.

CC Go ahead.

SC Okay. NOUN 20 was 180.44 213.63 35999. The attitude GARBLE were 181.5, 215.5 and 000.2 and the length of time 33 minutes.

CC Roger, Pete. And on the EMS delta V test results at that time it was very weak. Let me read them back to you real fast to make sure I got them right. It was plus 1.2 feet per second and 1 minute and 40 seconds and it went from minus 100 to minus 98.8 and the rest of the check went okay.

SC That's affirmative. And we have completed everything on the time line. And we are in the process of dumping the waste water at this time. (Garble) We're head over heels in all kinds of packages.

CC Roger, understand and how is everybody up there enjoying the zero g?

SC Everybody up here is enjoying the zero g super and we're steering it by for your uplink at Madrid.

CC Roger. Very good. We've still got about 3 minutes left and if the PLT has the time he might amplify on the glycol accumulator.

SC Here's what it was Dick. We serviced the - brought the glycol accumulated quantity up to 50 percent GARBLE

SL-II MC16/2

Time: 09:42 a.m. CDT, 1:42:00 CE1

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When we put the radiators back on the line we got - obviously at least one of the radiators took a big slug of fluid. We dropped pressure. We dropped quantity. We got a glycol flow low light momentarily. The quantity stabilized at about 40 percent. We've been watching it vent. On the night side apparently the fluid cooled and got on down to about 37 or 38 percent and is now back up to 41.

CC Roger. Thank you much. I copy that.

SC The main thing is that it appears to not be a leak 'n there we just didn't expect that big slug to go.

CC Roger. We copy, Paul.

PAO Skylab Houston, 1 hour 48 minutes ground elapsed time. We're less than 2 minutes away now from loss of signal.

CC Our initial thoughts are that we think we're stabilized and have got a good system but we're continuing to think about it.

SC Okay. We agree Jim. But what we wanted to do is get your concurrence on that before we service it again to bring it up to 50 to 55 for that CARBLE.

CC Yeah. Okay. Real fine. We're going to think about it.

CC Jim, the S-IVB out there in front of us vent - at least I presume it's the S-IVB out there in front of us venting.

CC Roger.

CC Skylab Houston we're about to have LOS here at Newfoundland. We'll have a short break and see you at Madrid.

SC Okay, sir.

SC And be advised we're loading the DAP now with your weight constraints.

CC Okay.

PAO Skylab Control Houston at 1 hour 50 minutes ground elapsed time. We've had loss of signal with Newfoundland. Next station to acquire will be Madrid some 2-1/2 minutes from this time. Skylab is presently in an orbit of 194.1 nautical miles by 83.6 nautical miles. The velocity now reading 25,795 feet per second. Continuing to monitor at 1 hour 50 minutes this is Skylab Control Houston.

END OF TAPE

SL II MC-17/1

Time: 09:51 a.m. CDT, 1:51:00 GET

5/25/73

CC Skylab, Houston through Madrid for
5-1.2 minutes. How do you read?
SC Hi, Houston. Read you loud and clear.
Standing by for your up-link.

CC Roger. Stand by.
SC Okay.
CC Roger, Pete. Go ahead, take ... And
as soon as we have good data, we'll go ahead and up-link.

SC You're in ... P20.
CC Okay, and I've got an NCI final pad
for you. Page 1-5.

SC I'm ready to copy.
CC Okay. 002 23 3735 plus 2063 plus
four balls, plus four balls, 180 009 002 1930 0009. All the
rest of the remarks are the same as the preliminary pad.
Go ahead.

SC 002233735 plus 206.3 plus all balls,
plus all balls, 180 009 002 19300009 and (garble) and
the rest of the remarks are the same.

CC Roger. That's correct.
PAO Skylab Control Houston. One hour 55
minutes ground elapsed time. That final NCC1 pad gives us
now a burn time of 2 hours 23 minutes 37 seconds, with the
DELTA-V on the burn of 206.2 feet per second. Resulting
orbit 200.8 nautical miles by 194.7 nautical miles. This
burn time is 9 seconds.

CC Skylab, Houston. We're ready to terminate
the waste water dump, and we believe that the second O2 purge
has been accomplished. Wonder if you could verify that for
us?

SC Yes, sir, it's been accomplished.
CC Roger. Thank you much.
PAO Skylab Control, Houston. One hour
56 minutes ground elapsed time. Flight Director Phil Shaffer
has advised his flight control team he'll be standing by shortly
for a GO for NCI. This phasing maneuver done outside of
station contact presently scheduled for 2 hours 23 minutes
37.4 seconds.

CC ... houston. Your vectors are in, and
you can go back to block.

SC Roger. Back to block and standing by for
the old NCI.

CC Very good.
CC Skylab, Houston. We're about 1 minute
from LOS here at Madrid. We're gonna see you at ARIA 2
plus 27. The bird looks as good to us down here as it does
to you. You're GO for NCI.

SL-II MC-17/2

Time: 09:51 a.m. CDT, 1:51:00 GMT

5/25/73

SC

Roger. Go for NCI, and that's super.

CC

Roger.

CC

And Skylab; Houston. We've taken a look; you have a concurrence with us. You're GO to reservice a coolant loop any time you want.

SC

Okay, thank you, Dick.

CC

Roger.

PAO

Skylab Control, Houston, at 1 hour 58 minutes ground elapsed time. We've had loss of signal with Madrid. During that pass the crew aboard Skylab, Pete Conrad, Paul Weitz, Joe Kerwin, were given a GO for the NCI maneuver. We will next acquire the Skylab at 2 hours 27 minutes ground elapsed time. This via ARIA aircraft. At 1 hour 59 minutes ground elapsed time, this is the Skylab Control, Houston.

END OF TAPE

SL-11 MC-18/1

Time: 10:15 a.m. CDT, 2:15:00 GET
5/25/73

PAO Skylab Control, Houston at 2 hours, 15 minutes ground elapsed time since the lift-off of the Skylab crew from Kennedy Launch Center. We presently show the orbital workshop, which has been in orbit for some 10 days with a present orbit of 239.7 nautical miles by 234.3 nautical miles. Flight Director Don Puddy referred to the orbital workshop status as OPS nominal. The workshop is presently pitched up 47 degrees, this being 2 degrees up from the 45-degree baseline. He advises that the workshop will be held in this altitude - in this attitude - until the fly around, deleting an earlier plan to maneuver the vehicle to the solar inertial attitude. The workshop pressure presently reads .35. The plan is to continue to take this pressure down to .1, then to start the repressurization to 5 PSI. The suit Umbilical system temperature, presently reads 34.5 degrees, this being a slight rise. The feeling is that it occurred because of the pitchup maneuver, which took place last night. We're at 2 hours, 17 minutes ground elapsed time, and referring back to an earlier conversation, the big blivet referred to, which was in front of Science Pilot, Joe Kerwin on the command module, is the canister which houses the parasol. We're 2 hours, 18 minutes ground elapsed time, and this is Skylab Control, Houston.

END OF TAPE

SL-II MC-19/1

Time: 10:26 a.m. CDT, 2:26:00 GET

5/25/73

PAO Skylab Control Houston at 2 hours
27 minutes ground elapsed time. We're less than 30 seconds
away now from time of predicted acquisition. Communication
acquisition through an ARIA aircraft with Skylab. However,
we may or maynot be able to acquire voice comm with the crew
on this - this contact. The ARIA aircraft has had an antenna
pointing problem. However, we'll standby and continue to monitor.
Meanwhile the NCI maneuver should have been accomplished. Our
next station contact is with Honeysuckle. This some 8 minutes
40 seconds from this time. We're at 2 hours 28 minutes standing
by, this is Skylab Control Houston.

CC Skylab Houston through ARIA, how do you
read?

CC Skylab, Houston through ARIA, for the
next for the next 9 minutes, how do you read?

CC Skylab, Houston, through ARIA, how do
you read?

PAO CAP COM Dick Truly trying to place a call
to Skylab through ARIA, as yet unsuccessful. We're at 2 hours,
29 minutes ground elapsed time, continuing to monitor.

CC Skylab, Houston, through ARIA, how do
you read?

CC Skylab, Houston, through ARIA, how do
you read?

SC Hello, Houston. Read you loud and clear,
how me?

CC Roger, I read you kind of weak and we've
got a lot of background static, Pete, but I can hear you, go
ahead.

SC Okay, Houston, we had a nominal burn on
time, Delta-VC read minus 15.1, the burn attitude was what we
trimmed at (garble) minus 0.2, 85 plus 0.2 reaching plus 0.1,
do you read that?

CC Roger, I copied the Delta-VC minus 15.1
and your trims on attitude were minus .2 plus .4, plus .1,
that right?

SC (Garble) Inaudible.

CC Roger, I copy, plus .2 for the first one.

SC (garble)

CC See if I get them right this time, here,
Pete, minus .2, plus .2, and plus .1.

SC That's it, you're coming in a little
better, we just completed a P52, do you want that?

CC Affirmative, go ahead.

CC (Inaudible) (garble), how do you read,
Houston?

SL-11 MC-19/2

Time: 10:26 a.m. CDT, 2:26:00 GET

5/25/73

CC Skylab, Houston. I can hear you, but I've got a lot of background static, but I can copy you, go ahead.

SC A P-52 option (garble) 25.33, 105 all balls plus 4 balls 9, plus 3 balls 66, plus 3 balls 50, the time 2 thru 9 00.

CC CDR, Houston, I got everything but the time. Say the time again, please.

SC 2 plus 29 plus 00.

CC Roger, copied it all, thank you.

SC (garble) Houston.

CC Roger, Pete. You know a couple days ago, I told you that we were going to be passing up sunrise sunset times for you for when (garble) flyaround in SEVA times, be advised the sunrise, sunsets, that you see in the launch check list of the flight plan, are accurate today. If you don't want them to the nearest second, I'll just let it go at that, over.

SC That's okay, just let them go, we'll ask you - -

CC Okay, real fine. We've still got about 4 minutes left in this pass and I'm standing by.

PAO Skylab Control, Houston, at 2 hours, 34 minutes ground elapsed time, a very ragged voice communications through the ARIA aircraft, but spacecraft commander Pete Conrad confirms the NC-1 maneuver was a nominal burn on time. We're at 2 hours, 34 minutes, we'll continue to monitor, this is Skylab Control, Houston.

END OF TAPE

SL-II MC20/1

Time: 10:36 a.m. CDT, 00:02:35 GET
5/25/73

SC (Inaudible)

CC Skylab, Houston. We're about 30 seconds
from LOS at ARIA. We're going to see you at Goldstone at
3:04.

SC Okay, Houston. It appears like we're on
the time line. It's because we do not have an ... we have 4 hours
to get organized and we're in very good shape, and we are in the
contest of getting ready to eat.

CC Roger. Copy. Thank you.

PAO Skylab Control, Houston at 2 hours 38 minutes
ground elapsed time. We've had loss of signal now - loss of
voice communications through ARIA. The next station to acquire
the Skylab will be Goldstone some 26 minutes from this time.
Just prior to the ARIA pass, Skylab did perform the NCI maneuver
successfully. This, Commander Pete Conrad reported, was a
nominal burn on time. We're at 2 hours 39 minutes. This is
Skylab Control, Houston.

END OF TAPE

SL-II MC21/1

Time: 11:03 a.m. CDT, 00:03:03 GET
5/25/73

PAO Skylab Control, Houston, at 3 hours 3 minutes ground elapsed time, less than a minute away now from acquisition over the States with Skylab on its second revolution. We presently show an orbit for Skylab of 201.4 nautical miles by 194.6 nautical miles. Velocity now reads 25,220 feet per second. Among the items to be done during the stateside pass will be the - providing a preliminary pad for the NC2 maneuver. This will be passed along by CAP COM Dick Truly. The burn time is currently scheduled for 4 hours 41 minutes 19 seconds with a DELTA-V of 43.7 feet per second and a burn duration of 2 seconds. Currently, Skylab is trailing the orbital workshop by approximately 600 miles. This should be down to about 250 nautical miles.

CC

GARBLE for the next 9 minutes.

SC

Roger, Houston. How do you read?

CC

I read you loud, Pete. There was a squeal in the back ground. Now try again, please.

SC

The squeal in the background is the PLT GARBLE. He tried to eat his ... along with his sandwich, and it was too hard for him to get down. We got our fuel cell purge off on time, and we are enjoying, in fact, a very nice meal.

CC

Very good.

SC

Most of our stowage is reconfigured. We have a little bit more to do, but I figure we have more than adequate time, and we'll be in very good shape. I guess we have not got the TV out, because we left TV cameras - we had to do so much shuffling down below to get into the lockers that we just didn't get that out. Is there another station later on where you might get a peek at it, because that's the next thing we're going to do is rig cameras and TV after lunch.

CC

Okay, Pete. Why don't you just let us know when you get it set up, and we'll set up a later pass if we have the time. And also, Pete, I've got an NC2 preliminary pad page 1-9, if you have time to copy sometime during this pass. We've still got 7 minutes.

SC

I'm ready to copy; go ahead.

CC

Okay. 004, 41, 1927, plus 0437, plus 4 balls, 180, 189, 009, 0303, 0002. And I'm told I read NOUN 22 yaw incorrectly. It should be 001. Over.

SC

Okay. 004, 41, 1927, plus 043.7, all balls, 180, 189, 001, 0303, 0002.

CC

That's affirm. The weight is 30225, pitch trim plus 108, yaw trim plus 026. And this will be a single bank burn.

SC

Okay. The weight 30225, plus 1.08, and for the pitch trim and the yaw trim, plus 026.

CC

That's affirm.

SL-II MC21/2

Time: 11:03 a.m. CDT, 00:03:03 GET

5/25/73

CC And CDR; Houston. When you're through with the DAP work, would you give us ACCEPT. We'd like to update PIPA/BIAS.

SC You've got ACCEPT. It's all yours at P20.

CC Thank you. And also, Pete, we've got about 5 more minutes left in this pass. We'd like to - since we've had so many changes the last few days, there is a couple or three remarks we'd like to visit with you about, about the upcoming remainder of the rendezvous.

SC Go ahead.

CC Okay. First one. Right after NCC, we think there'll be - you're in a good attitude to go ahead and try to acquire VHF lock-on - that's at about 5 plus 30 to get a VHF range and system check, no marks. And be advised you probably will lose the lock-on sometime after 5 plus 40.

SC Okay, Dick, I've got that noted in here.

CC Okay. Good. The next one is, and I think you're already aware of this, take sextant marks pre-NSR, whenever the SWS is visible, and our trajectory data predicts that it should be visible until at least NCC plus 12 minutes.

SC Wait a minute. It'll be visible from the NCC burn for 12 minutes afterwards. Is that what you're saying for NSR?

CC That's affirm, Pete.

SC Okay.

CC And the last one, Pete, is overnight we've done some more thinking, and we've done some computer runs about the VHF patterns on the SWS. And it turns out that you're going to get better VHF during the terminal phase if we just leave the vehicle in EGIL special attitude rather than going to solar inertial. And since that helps us out so much up at the SWS, that's what we intend to do. The SWS will be and it will remain in EGIL special attitude, where it is now, until about 7 plus 36, which is over Guam, and then we'll roll left about 28 degrees to the fly-around attitude, which will put both wing routes in the Sun. And you will have VHF and sextant available from TPI right on down to station keeping. Over.

SC Okay. So for the fly-around we'll be roll left 28 and pitch to whatever EGIL's pitch attitude is these days. What, 50 degrees?

CC It's about 25 degrees degrees (static) (inaudible).

CC And Skylab; Houston. Do you still read me on VHF through Goldstone?

SC That's affirm.

SL-II NC21/3

Time: 11:03 a.m. CDT, 00:03:03 GET
5/25/73

CC Okay, we cut out for a second there. The current EGIL special pitch attitude is about 45 degrees, and you are correct. By the time you get there and for the fly-around it will be in the attitude we talked about which is roll. So both wing routes are in the Sun and pitched up about 45 degrees. Also we need a potable tank inlet valve closed.

PAO This is CAP COM Dick Truly talking with spacecraft commander Pete Conrad during this.

CC ... closed.

SC Thank you.

PAO During the stateside pass we now show 3 hours 12 minutes since lift-off.

SC Houston, CDR.

CC Go ahead.

SC Rusty down there?

CC He's listening right here.

SC Tell him the butterscotch sure is good today on the lunch.

CC Was it a hard swell on it?

SC Nope, these are straight 5 psi GARBLE.

CC Roger that.

PAO The "Rusty" referred to by Spacecraft Commander Pete Conrad is Rusty Schweickart, the backup commander for Skylab. We're at 3 hours 13 minutes and continuing to monitor. This is Skylab Control, Houston.

PAO Skylab Control, Houston, 3 hours 14 minutes ground elapsed time. We've had loss of signal. Our next station to acquire, in approximately 2 minutes, will be Newfoundland. We now show Skylab in an orbit of 201.4 nautical miles by 194.5 nautical miles. Velocity now reads 25,212 feet per second. At the time of the NC2 maneuver, Skylab should be trailing the workshop by approximately 250 nautical miles. We're at 3 hours 15 minutes. This is Skylab Control, Houston.

END OF TAPE

SL-11 MC-22/1

Time: 11:15 a.m. CDT, 3:15:00 GET
5/25/73

PAO We're at 3 hours 15 minutes. This
is Skylab Control Houston.

CC Skylab, Houston. We're AOS at Bermuda
for the next 9 minutes.

SC Roger, Houston.

CC And we're standing by.

SC Say, Houston, Skylab.

CC Go ahead, CDR.

SC Where about are we right now. What
did we just pass over?

CC Well you're just pass - you're just
to the east of the Great Lakes in above 'em. You're right at
about 50 degrees north latitude.

SC Oh, I thought we had passed over some-
thing that had a lot of ice in it. There was snow on the
ground, we were trying to figure out where we were.

CC Roger. I think it's called Canada.

SC Well it's a (garble) for me. I never
been this far north before.

CC Rog.

CC And Skylab, Houston, we still have about
8 minutes left in this pass. If you guys have the launch
checklist still out, I got two or three corrections back on
the flight plan pages that are L-echo. Over.

SC Okay, Houston. He's handing it to
me right now.

CC Okay, standing by.

SC Okay, Houston. How do you read Skylab
now?

CC Read you loud and clear now.

SC Okay, at SEVA L-echo.

CC Okay, Pete, you noticed in there where
it says - it lists performed class and panel configuration
and has a bunch of exceptions.

SC Yeah.

CC I'd like to add two exceptions to that
list. First is on panel 325, cabin pressure relief valve,
two of them to close. We want - we do not want to accomplish
that. And the second one is all the items listed for panel
375. Over.

SC Okay, perform the (garble) check 3-1
through 3-9 except. And add to that list 325 cabin press
relief valves closed. Do not do that. And do not reconfigure
panel 375.

CC That's affirm and I have one last one
that we would like you to do. This is an additional check

SL-11, MC-22/2

Time: 11:15 a.m. CDT, 3:15:00 GET
5/25/73

we would like for you to accomplish on 399. The OX/GLYCOL
EVAP in temperature valve to max. And that's listed on
page S/310 of the systems checklist.

SC (garble) It's the same valve. Is that
correct?

CC You were out out for a second. Say
again, please.

SC You wanted to put the valve when we
get to it, to MAX and it's now in VENT. Is that correct?

CC It says I think in the checklist Pete,
as required. And we want it in MAX. And also be advised,
all these changes are for this presleep period just for this
evening.

SC Understand.

CC Okay, real fine. We have about 4 minutes
left in this pass. Standing by.

CC And CDR, Houston. In event you have
time to get the TV out prior to Honeysuckle 4 plus 10, that's
where we think we'd like to stick it in. Right plan.

SC Stick what in the flight plan? TV?

CC That little TV check that we were - had
set up in there.

SC (garble)

CC Okay, real fine.

PAO Skylab Control Houston, 3 hours 23
minutes now into the mission. We've got a bit over 3 minutes
remaining on this pass. That was the CAP COM, Dick Truly,
going over checklist changes with spacecraft commander Pete
Conrad. We now show Skylab at an altitude of 201 nautical
miles by 194.4 nautical miles in orbit. Velocity now reading
25,225 feet per second.

CC Skylab, Houston. We're about 1 minute
from LOS. We'll see you at Canary at - after a very short
break.

SC Okay, Houston. Roger, Roger.

END OF TAPE

SL-11 MC-23/1

Time: 11:27 a.m. CDT, 3:26 GET
5/25/73

PAO Skylab Control, Houston; 3 hours,
27 minutes ground elapsed time. We now have acquisition with
Canary - -

PAO Skylab, now, on its third revolution.
The orbit, presently, reading 201 nautical miles by 194.4
nautical miles. Present altitude 199.3 nautical miles for
Skylab.

CC Skylab, Houston. We're AOS through
Canary for the next 7 minutes.

SC Okay, Houston, and do want ACCEPT?

CC Stand by one.

CC Skylab, Houston. We request ACCEPT and
we'll uplink the OWS vector and we'll catch the CSM vector
at Honeysuckle.

SC Okay. You've got ACCEPT.

CC And ha - CDR, Houston. The Honeysuckle
pass is about 4 plus 10 and we'd like you either in POO or
P-20 so we can get that uplink in.

SC Okay. We'll be in POO or P-20.

CC Rog.

SC We will have some TV for you there.

CC Very good.

CC Skylab, Houston. You've got the uplink
and you can go back to BLOCK.

SC Very good.

CC CDR, Houston. Be advised, looking at
the data, we expect that it's possible some time in the next
few minutes, you might get a caution and warning on high
02 flow, due to the purge configuration. But, there's no
problem with it. We're about 1 minute from LOS at Honeysuckle
and we'll be there at 4 plus 10.

SC Okay.

CC And you're presently starting a very
long pass over Africa.

SC Okay.

PAO Skylab Control; 3 hours, 34 minutes,
ground elapsed time. The purge configuration referred to was
the waste management vent-valve being opened. We're less
than 30 seconds away, now, from loss of signal on this
Canary pass.

PAO Skylab Control, Houston; 3 hours, 35 min-
utes ground elapsed time. We've had loss of signal, now, with
Canary. The next station to acquire will be Honeysuckle, this
some 27-1/2 minutes away.

END OF TAPE

SL-II MC-24/1

Time: 12:09 p.m. CDT, 4:08 GET

5/25/73

PAO Skylab Control, Houston, at 4 hours 9 minutes ground elapsed time coming up now on acquisition with Honeysuckle. Skylab presently in an orbit of 201.3 nautical miles by 194.6 nautical miles. During this pass we expect the CAP COM Dick Truly to pass along to the crew of Skylab a series of maneuver pads. He will pass along a final NC-2 pad. The burn to occur at 4 hours and 41 minutes 19.2 seconds with a DELTA-V of 44.5 feet per second. Burn duration 2 seconds resulting orbit 220 nautical miles by 199.9 nautical miles. He will also pass along a preliminary corrective combination maneuver pad. This event occurring at 5 hours 27 minutes 26 seconds of the preliminary pad with a DELTA-V of 39.4 feet per second. Burn time 2 seconds. Resulting orbit 223.5 nautical miles by 220.1 nautical mile. Truly will also pass along a preliminary NSR maneuver pad. This event having a take time - time of ignition of 6 hours 4 minutes 26 seconds. DELTA-V of 17.8 feet per second. Burn time 1 second.

CC Skylab, Houston. We're AOS at Honey-suckle for the next 8 minutes.

PAO Standing by now for voice contact with Skylab.

CC Skylab, Houston we're AOS at Honey-suckle for the next 7 minutes.

CT Honeysuckle Com Tech, Houston, not one.

CC Honeysuckle contact.

CC Roger, you're loud and clear.

CC Skylab, Houston we're AOS at Honey-suckle for the next 6-1/2 minutes.

CC And Skylab, Houston, we need ACCEPT.

PAO Skylab Control Houston. Four hours 13 minutes ground elapsed time. No voice contact with the crew aboard Skylab. However, we are receiving telemetry data in the Mission Control Center.

CC Skylab, Houston at Honeysuckle for 5-1/2 minutes.

SC Roger, Skylab. We're in P20 and ready to go to ACCEPT. And I have P52 data for you.

CC Roger, Pete. We do need ACCEPT but we already have copied the NOUN 93s off our data. And I've got three pads for you.

SC Okay. I'm ready to copy.

CC Roger. First is final pad for NC2 on page 1-9.

SC Go ahead.

SL-11 MC-24/3

Time: 12:09 p.m. CDT, 4:08 CET
5/25/73

18 minutes ground elapsed time. During that Honeysuckle pass the CAP COM Dick Truly passed along a series of maneuver pads that will be coming up as a sequence to the rendezvous and docking with the workshop. The INCO flight controller reported that the television looked good during the test over Honeysuckle. We're at 4 hours 20 minutes ground elapsed time and this is Skylab Control, Houston.

END OF TAPE

SL-II MC25/1

Time: 12:29 p.m. CDT, 4:28 CET

5/25/73

PAC Skylab Control Houston it's 4 hours 29 minutes now since time of lift-off. We presently show the command and service module with Conrad, Weitz, Kerwin on the third revolution. Less than a minute away now from acquisition by Hawaii. Present orbital parameters read 201.3 nautical miles by 194.6 nautical miles. Meanwhile the orbital workshop in it's 159th revolution has just been acquired by Hawaii. Orbital parameter is 240 nautical miles by 234 nautical miles. Hawaii now has acquisition on Skylab we'll standby.

CC Skylab, Houston. We're AOS at Hawaii for six minutes.

CC Skylab, Houston. We're AOS at Hawaii for the next six minutes.

PAO Skylab Control, Houston, 4 hours 33 minutes ground elapsed time. Apparently experiencing some station problems, ground based problems over Hawaii at this time. We're at 4 hours 33 minutes continuing to monitor. This is Skylab Control.

CC Skylab Houston we're AOS in Hawaii through VHF voice for the next 3-1/2 minutes.

SC GARBLE VHF Houston.

CC I heard you answer me Pete but I didn't understand it. Say again, please.

SC I said you've got the VHF.

CC That's affirm. We got an S-band problem at the Hawaii tracking station.

PAO Skylab Control, Houston; 4 hours 36 minutes using VHF for voice comm now. Still not receiving TM data in the control center because of the S-band receiver problem at the Hawaii tracking station. However, Skylab still GO for the burn. Now scheduled for 4 hours 41 minutes 19 seconds.

CC Skylab Houston we're about 1 minute from LOS at Hawaii. We have not seen S-band data here but when we saw you at Honeysuckle you were - looked real good. You're GO for the burn and we're going to see you at Goldstone at 4 plus 41.

SC Okay that's just about - burn time and we're just standing by to make the burn.

CC Very good, Pete. And when you get squared away after the burn I've got a little note here that I wanted to talk to you about something later on.

END OF TAPE

S BAND 1081

SL-II MC-26/1

Time: 12:39 p.m. CDT, 00:04:38 GET
5/25/73

PAO Skylab Control, Houston; 4 hours 40 minutes ground elapsed time. Standing by, now, for acquisition with Skylab through Goldstone. Four hours 41 minutes; continuing to monitor. This is Skylab Control, Houston.

PAO Skylab Control, Houston; 4 hours 43 minutes, ground elapsed time. Goldstone has acquired the Skylab. However, we presently have very low signal strength. We'll stand by and continue to monitor.

PAO Skylab Control, Houston; 4 hours 45 minutes, ground elapsed time. It appears likely that an S-Band antenna problem is also the case at Goldstone. Not presently receiving telemetry data on our displays here, in Mission Control. Standing by, continuing to monitor, this is Skylab Control, Houston.

CC Skylab, Houston through VHF at Goldstone.
How do you read?

CC Skylab, Houston through Goldstone VHF.
How do you read?

SC Read you loud and clear, Houston. How re?

CC I can read you, Pete. We're having antenna problems on the ground. How'd the burn go?

SC Okay, Richard. I find that I ... it a little bit. (garble) trouble (garble). (Garble) about 85. But, the EMS read minus 11.0. And I called up NOUN 85 ... and it read plus 1.6 feet per second, (garble) minus 0.2. Did you read that, Houston?

CC Pete, I copied EMS minus 11.0 and NOUN 85 plus 1.6 and an out-of-plane of minus 0.2, and that's all I copy.

SC No, it wasn't an out-of-plane (static) Joe probed a Noun 85. I didn't see him do it, but (garble) on top of that, so I write down our residual. After I got to a flashing 37 (garble) I called up 168², and I read the following numbers. And I don't know whether they mean anything or not. (garble) 1.6, (garble) is out of plane at minus .2 (static)

CC Skylab, Houston. We copied that, and if you read me, we're going to have a Newfoundland AOS at about 4 plus 51.

PAO Skylab Control, Houston; 4 hours 48 minutes - We've had loss of signal, now, with Goldstone, unable to acquire S-Band data on this pass. However, CAP COM Dick Truly has spoke with the Spacecraft Commander Pete Conrad via VHF. We'll stand by, continue to monitor. The next station to acquire Skylab is Newfoundland. We're at 4 hours 49 minutes. This is Skylab Control, Houston.

END OF TAPE

SL-II MC27/1

Time: 12:52 p.m. CDT, 00:04:51 GET

5/25/73

CC Skylab, Houston. We're AOS at Bermuda for the next 7 minutes.

SC (Inaudible)

PAO Skylab Control, Houston; 4 hours 54 minutes ground elapsed time. We've acquired the Skylab spacecraft through Bermuda Tracking.

CC Skylab, Houston. How do you read through Bermuda?

SC We read you loud and clear; how us?

CC Hey, loud and clear. That's good. We've been having problems here. Getting back to the GARBLE, Pete, we didn't quite understand about whether you think you underburned and, if so, by how much?

SC Yeah. What happened was that something swung off the instrument panel and there was burning and Joe went ... proceed and shut down so that we were at a 16 85. I did not see him do that, and I thought we were wandering for the burn attitude; so I reached up and controlled myself without either one of us seeing the residuals on the DSKY. And that immediately stuck us into a flashing 37 with P40 at the window. At that point I called out 1685 and looked at it, and it said plus 1.6, nothing in Y, and I forget the other number I gave you a minus 0.2. So I think I underburned by 1.6 feet per second.

CC Roger, Pete. Now we do have your vector on the ground through Bermuda, and you did burn about 1.6 underburn, and it's no problem.

SC Okay.

SC It looks like a short burn logic in the CMS, which wasn't supposed to be that way in the spacecraft, is that way in the spacecraft, huh?

CC Roger. Maybe so.

SC Well, we'll find out on the next one, because that's an even quicker one.

CC Roger.

SC Joe's got A marked. It's been swelling up since about MARK 4; so I think we're in real good shape.

CC And, Pete, we've still got you for about 3 minutes. I've got a couple of things here I'd like to talk to you about, if you have the time. If you don't, we're coming up on a long Canary and Ascension pass.

SC Go ahead.

CC Okay, subject is the maneuver that we may or may not need to do for the lining on wing one when you get to the fly-around. If possible, we'd like to know, prior to you going LOS at Guam, if you are going to need this maneuver. And if you can't tell us at Guam, you can tell us as soon as you get

SL-II MC27/2

Time: 12:52 p.m. CDT, 00:04:51 GET
5/25/73

to Goldstone. If the answer is yes, that you do want to roll the wing more into the sunlight, we'd like to accomplish that maneuver during the stateside AOS. This is while you're flying around, and the maneuver time we propose to set in is 5 minutes. The reason for this is that this will result in a situation where no SWS maneuvering will be required while the CSM is soft docked at the SWS, which will make us feel better about the vehicle dynamics during the SEVA prep. And we - since there are some double failure combinations which would make a soft dock roll by the SWS. Band S. Over.

SC I give up. You guys tell me what attitude you would like to keep it in, and if I can't flirt my way around it, I'll call you and tell you when I get there.

CC Wait a minute, Pete. The bird is going to be, when you get to it, the bird is going to be in the attitude we talked about, which has both wing routes in the sunlight. The question is, is that good enough for the SEVA? And we hope that it is. If it is not, then we aren't going to roll it during the stateside pass. Over.

SC Well, it seems to me that I already said I didn't see any reason why that wouldn't be all right for the SEVA about a week ago. So if you want to leave her roll 28 20 and pitch to the EGIL special, whatever that comes out to be, that's okay with me.

CC Rog. We're together, Pete. We intend to leave it at 28 20 unless you tell us that - in after looking at it, that that is just not enough lighting. We've got about 50 seconds left until LOS here in Bermuda, and I'll see you at Canary.

SC Yeah. And I also understand your preference is if we thought we had enough lighting, you'd like to go back to the EGIL special, zero roll and 50 pitch, right?

CC No, sir. We'd just soon stay with both wings in the sunlight, and it'll - the vehicle would stay then as you will initially see it when you start to fly around - you know, with both wing routes in the sunlight.

SC Okay.

CC Very good, and we'll see you at Canary.

SC Bye.

PAO Skylab Control, Houston; 5 hours ground elapsed time. That was Skylab Commander Pete Conrad signing off in his conversation with CAP COM Dick Truly. Standing by now for acquisition over Canary.

END OF TAPE

SL-11 MC-28/1

Time: 13:02 CDT, 5:01 CET

5/25/73

PAO Skylab Control, Houston; 5 hours, 1 minute ground elapsed time. Early tracking data shows a current orbit for Skylab, of .20 nautical miles by 200.1 nautical miles.

PAO Skylab's current velocity now reading 23,214 feet per second.

CC Skylab, Houston. We're AOS Canary for 14 minutes.

SC Roger, Houston. We're standing by for the final pad.

CC Roger. I'll have it in a minute, and I do have one other thing I'd like to talk to you about, if you've got time.

SC Go ahead.

CC Okay, Pete. This concerns your CSM control mode configuration during the SEVA. We suggest, when Paul is outside, that you inhibit thruster A-4, as well, as A-3 for the SEVA. The reason is, if we don't and had a failed thruster on of A-4, we'd end up with a plus-X translation. The pitch control is fine with only Charlie-3 and Charlie-4 on. Jerry Carr verified it this morning over in the CMS and the control works good. You might think about that one. To summarize that, that's ah - we want to inhibit A-3 and A-4.

SC Understand.

CC And one more thing, Pete. It's in the checklist and on - in the SEVA section in back of the launch checklist on page 1-1.

SC Yeah, we know where it is.

CC Rog.

SC Hey, Houston, Skylab.

CC Go ahead.

SC How long do we have to keep running this 02 vent?

CC Stand by, one.

CC CDR, Houston. We want to leave the 02 vent going until just prior to the SEVA. And one thing, I forgot to tell you, I had written down here, was we've turned on the switch tracking lights.

SC Okay. Could we try VhF now, or you think we wouldn't get it until right after NCC?

CC I think you might as well wait, Pete. Because, of the attitudes and the way they are, I don't think you'd have any ... here, and I think you might as well wait until right after NCC.

SC Okay.

CC Roger.

SL-11 MC-28/2

Time: 13:02 CDT, 5:01 GET
5/25/73

PAO
11 minutes, now.

Skylab Control, Houston, at 5 hours,

PAO
We presently show an orbit of 219.1 nautical miles by 200 nautical miles.

Skylab now under acquisition by Ascension.

CC
minutes left. I've got a NCC final pad for you on page 1-11.

Skylab, Houston. We've still got 6-1/2

SC
Go ahead.

CC
176 031 011 0264, go ahead.

005 27 2630 plus 0363 plus 0065, minus 0150,

SC
176 031 011 026.4.

005 27 2630 plus 0363, plus 0065, minus 0150,

CC
got an NSR pad for you, if you're ready to copy.

That's good readback, Pete, and now, I've

SC
Go ahead.

CC
010, and stand by on the DELTA-V counter, please.

Plus 0210, plus 0043, minus 0175 173 265

CC
The DELTA-VC, Pete, is 0142, go ahead.

SC
173 265 010 014.2.

Okay. Plus 0210, plus 0043, minus 0175

CC
got 4 minutes left in the pass, and I'm standing by.

Rog. Pete. Good readback. We've still

SC
in about 2 minutes.

Okay. We'll be doing a final count, here

CC
Okay.

END OF TAPE

SL-II MC29/1

Time: 13:14 p.m. CDT, 5:13 GET
5/25/73

PAO Skylab Control, Houston; 5 hours 16 minutes ground elapsed time. Flight Director Phil Shaffer taking a status check now for the NCC maneuver.

CC Skylab, Houston. We've looked at the bird. You're GO for the NCC burn.

SC Roger. Houston.

CC And Skylab; we've still got about 1-1/2 minute left in this pass. We're going to have about a three minute break and then we're going to see you through an ARIA aircraft sitting on the ground at Capetown.

SC Okay.

PAO Skylab Control, Houston, at 5 hours 18 minutes ground elapsed time. We've had loss of signal with Skylab. We now show an orbit of 219.1 nautical miles by 200 nautical miles. The two maneuver pads being passed up, NCC the time of ignition, 5 hours 27 minutes 26 seconds. DELTA-V 39.8 feet per second. Burn time 2 seconds. The NSR pad, time of ignition 6 hours 4 minutes 26 seconds. The DELTA-V 27.7 feet per second with a burn time of 1.1 second. Now these numbers slightly larger than those passed along in preliminary pad because of the slight underburn in the NC2 maneuver. We'll stand by, continue to monitor. This is Skylab Control, Houston.

SC Okay GARBLE you're going out on GARBLE okay.

CC ARIA GARBLE and GARBLE standby.

SC Roger.

SC Okay GARBLE.

CC Skylab, Houston; how do you read?

CC Skylab Houston through ARIA how do you read?

SC Inaudible.

END OF TAPE

SL-II MC-30/1

Time: 1:30 p.m. CDT, 00:05:30 GET

5/25/73

PAO Skylab Control, Houston. Five hours
30 minutes since lift-off. We've just had loss of signal
with the ARIA aircraft stationed on the ground at Cape Town.
Next to acquire will be Carnarvon - this at some 13 minutes
25 seconds from this time.

END OF TAPE

SL-II MC-31/1

Time: 13:42 p.m. CDT, 5:42 GET
5/25/73

PAO Skylab Control Houston at 5 hours
43 minutes ground elapsed time. Less than 1 minute away now
from Carnarvon acquisition. We'll keep the line open and
continue to monitor.

PAO We have AOS Carnarvon.

CC Skylab, Houston, through Carnarvon.

SC Hello, Houston. Be advised that we have
VHF ranging. We've picked it up right after NCC at
117.08 miles. We still have a lot, and the SPP is able to
track the tracking lights although they are quite dim. So
I'd suspect that's attitude. Is that correct?

CC Roger, that is affirm Pete and that's
good news on the VHF.

SC The - we had a good NCC burn with a
minus 12.9 are the residuals. For DELTA-VC the burn was on
time. The burn was trimmed at the burn attitude. We had
0 in X, minus 0.2 in Y, and zero in Z. And be advised it
does leave a large residual. It would begin about 1.6 foot
... that we had to take out.

CC Roger, copy Pete. Thank you.

SC And our first cut through the P34
recycle showed very good agreement with the ground solution
NSR.

CC Roger, copy.

SC And be advised we did go with the
onboard which was a little different from the ground. Let
me read you NOUN 81. (Garble) CC is plus 0 375 plus 0060
minus 132.

CC Roger. Repeat, copy.

SC And be advised that we have a match
pare solution which we will burn that is plus 20.9. Of
course I don't know the outer plane yet, and minus 20.7.

CC Roger, copy.

PAO Skylab Control Houston. Five hours
47 minutes ground elapsed time. Spacecraft commander Pete
Conrad talking with the CAP COM Dick Truey reporting a good
NCC burn. We presently show an orbit for Skylab, of 224.8
nautical miles by 216.8 nautical miles. This is Skylab
Control, Houston.

CC Skylab, Houston. We're ready to swap
quad Charlie to the PSM.

SC Roger Charlie to the PSM.

CC That's fine.

PAO Skylab Control, Houston, 5 hours 49
minutes; presently under acquisition by Honeyauckle.

PAO Skylab Control, Houston, 5 minutes -
5 hours 51 minutes of status check in mission control GO/NO GO
for NSR.

SL-II MC-31/2

Time: 13:42 p.m. CDT, 5:42 GET
5/25/73

CC Skylab, Houston, we're GO for the
for the next NRS burn.

SC Roger, Houston. We're GO here.

CC Very good.

PAO That burn scheduled to occur at 6 hours
4 minutes 26 seconds ground elapsed time. We're at 5 hours
52 minutes now.

PAO Skylab Control Houston, 5 hours 54
minutes ground elapsed time. We've had loss of signal now
with Honeysuckle. The next station to acquire will be
Hawaii, some 12 minutes 45 seconds from this time. We presently
show Skylab with an orbit of 225 nautical miles by 217.3
nautical miles and some 90 watt miles away now from the
Saturn workshop. We're at 5 hours 55 minutes ground elapsed
time. This is Skylab Control Houston.

END OF TAPE

SL-II MC32/1

Time: 2:06 p.m. CDT, 00:06:06 GMT

5/23/73

PAO Skylab Control, Houston; 6 hours 6 minutes ground elapsed time, less than 1 minute away now from Hawaii acquisition with Skylab. We'll keep the line open and continue to monitor.

CC Skylab, Houston. We're --

SC Hello, Houston.

CC Hello there, CDR. We're in Hawaii. How do you read?

SC Roger. Read you loud and clear. The burn was on time. It was plus 0.1, minus 0.1, minus .1. EMS read by this good 0.9 and I gave - let me read you the NOUN 81. It was plus 20.9, plus 4.4, and minus 14.7.

CC Roger. Got that.

SC Okay. We're in the process of maneuvering heads up.

CC Roger, Pete. Sounds real good.

PAO Skylab Control, Houston; 6 hours 9 minutes. We now show Skylab with an orbit of 229.3 nautical miles by 224.3 nautical miles.

SC Say, Houston; CDR.

CC Go ahead.

SC There is just one whale of a lot of noise on VHF; do you guys have any idea where that's all coming from?

CC Stand by 1, Pete.

SC I mean all around the world we've been getting it, not just over Hawaii or something like that. And my other question is, we should not have VHF ranging now, right?

CC To your second question, that's affirmative. We should not have VHF ranging now. And I guess we don't have a quick answer for the noise on the VHF, although our - you know our past experience on interference from control towers and so forth. No better answer than that, Pete.

SC Okay.

SC Okay, Houston, on our first recycle we're a little bit more than - little bit less than 4 minutes early. You agree with that?

CC Roger. We are looking at it on the data.

CC And CDR; Houston. We're about 1 minute from LOS at Hawaii. We're going to see you at Goldstone at 6:19.

SC 6:19.

CC Roger

PAO Skylab Control, Houston; 6 hours 14 minutes since lift-off. We've had loss of signal at Hawaii. Some 5 minutes 45 seconds away now from acquisition with Goldstone. This is Skylab Control, Houston.

END OF TAPE

SL-II MC-33/1

Time: 2:19 CDT, 00:06:19 GET

3/25/73

PAO Skylab Control, Houston, at 6 hours
19 minutes since lift-off. Standing by now for acquisition
with Goldstone.

CC Skylab, Houston. We're AOS at Goldstone
for 5 minutes.

SC Roger, Houston.

CC And ah - Pete, we're going to have TPI
preliminary pad for you at Bermuda, not at Goldstone. And
it's about time to swap - swap QUAD Alfa to the PSM and along
that line we kind of think your onboard instrumentation read-
ing for QUAD Alfa may be in error. We're showing a transducer
reading of about 97 percent on board, and it should be reading
about 83, over.

SC Yeah, it's stuck high, I guess. It's
reading well over 100 percent. We can ah - we can now make
out the ATM solar ... the sextant in the workshop very
clearly.

CC Roger.

SC And I have got VHF range back, it appears
to be about 63 miles.

CC Roger, copy. We're closing.

PAO Skylab Control, Houston; 6 hours, 21 min-
utes. Pete Conrad reporting. His ranging -onboard ranging
data shows a distance of some 63 nautical miles.

SC Okay, Houston. I have A on the PSM now,
and quad (garble) propellant valves are both barber pole.

CC Roger. Copy.

SC Did you get my - What do you all think
about that 4-minute slip? We've got a couple of NOUN 49s and
they will prove our vector, here. Houston.

CC Toger. At the moment, Pete, we're showing
you closer to the nominal than a 4-minute slip. But it can
change. We're just going to have to press on and look at
some more data.

SC Okay.

PAO Six hours 22 minutes, we now show Skylab
with an orbit of 230 nautical miles by 224.4 nautical miles.

CC Skylab, Houston, we're about to go LOS
at Goldstone. We'll see you at Mila at 6:27.

SC Say, Houston, could we secure this 02 purge
at 6 hours and 30 minutes isn't it.

CC (Garble)

PAO Less than 2 minutes away, now from acqui-
sition by Mila.

END OF TAPE

SL-11 MC34/1

Time: 14:26 p.m. CDT, 6:26 GET

5/25/73

CC Skylab, Houston. We're AOS at MILA for
9 minutes.
CC Skylab, Houston. We're AOS at MILA for
8 minutes.
PAO Skylab Control, Houston; 6 hours 31 minutes
ground elapsed time.
SC Houston do you read Skylab?
CC Roger, Pete. Loud and clear. Go ahead.
SC One of the guys that it is on there in
Washington Center, would you go for that?
CC (Laughter) Roger. They clear you for
anything?
SC No, but they just cleared 32 Quebec some-
body for something.
CC Roger.
PAO We now show Skylab with an orbit -
SC I'm surprised we got the VHF ranging
back. We lost it for a while. We got it back just in the
nick of time to keep Mr. Weitz at work on his charts.
CC Good, good. And also Pete we're working
for an answer for you on the O2 purge and get it back to you
as soon as we can.
SC Yeah we're getting - the MASTER ALARM
light is tied to the SPS burns, it's very convenient, comes
on right at the wrong time. When O2 flow goes high.
PAO Skylab now has an orbit of 230 nautical
miles by 224.5 nautical miles. Meanwhile the Saturn workshop
has an orbit of 240.1 nautical miles by 234 nautical miles.
CC And one thing Pete on the C&W if you
inhibit that one - that one parameter it might help that
situation in event we don't get an answer that we can knock
it out.
SC Okay.
SC And we do have you at Bermuda is that right?
Or do we have you at Newfoundland?
CC The situation is Pete we're in the middle
of a Bermuda pass and we do have telemetry shutoff right now
in order to get the TPI pads out.
SC Oh, okay. We're standing by.
CC Roger that.
CC CDR Houston I've got a TPI preliminary
pad for you. Page 1-14.
SC Go ahead.
CC 007, 04 4600, plus 183, plus 007, minus
067, plus 194 47, plus 006 02, plus 023 12. Go ahead.
SC 007, 04 4600, plus 183, plus 007, minus
067, plus 194 47, plus 006 02, plus 023 12.

SL-II MC34/2

Time: 14:26 a.m. CDT, 6:26 GET

5/25/73

CC That's affirm. That's a good read back
Pete and I've got a docking attitude pad for you on page
1-17.

SC Go ahead.

CC 185 038 009.

SC 185 038 009.

CC And CDR Houston you're go to terminate
the purge whenever you like.

SC Whoopee. Thank you.

CC Roger.

SC Be advised our recycle gave us 07 :02:2795
as a TPI time.

CC Roger. Copy.

CC And CDR Houston also on TPI the burn SCS
the ignition is EMS counter 0.8. DELTA-VC 6.9. Trim to
tailoff of 12.6.

SC Okay set the counter at 69, light at .8
and trim to minus 12.6 is that right?

CC That's affirm Pete and we're going LOS.
See you at Ascension at 6:45.

SC Okay. You got a CSM weight trim for me?

CC Negative.

CC Skylab, Houston. If you still read me go
with what you've got on vents and times.

SC Inaudible.

PAO Skylab Control, Houston, at 6 hours 40 min-
utes ground elapsed time. We've had loss of signal with
Bermuda. The next station to acquire will be Ascension.
The TPI maneuver pad passed up to the crew of Skylab calls
for time of ignition of 7 hours 4 minutes 46 seconds. A
DELTA-V of 19.5 feet per second, burn duration 1 second.

END OF TAPE

SL-II MC-35/1

Time: 2:44 p.m. CDT, 00:06:44 GET
5/25/73

PAO This is Skylab Control; 6 hours 44 minutes 53 seconds ground elapsed time in the Skylab II flight, which is now in the process of overtaking or trying to rendezvous and dock with the Skylab space station. Less than a minute now out from acquisition of the Ascension Island Tracking Station in the south Atlantic to beginning of revolution number 5. Revolution number 161 for the Skylab space station. Hopefully, we will be having a nominal burn on the next mission. Duration of some 1 second. 19 plus feet-per-second change in velocity to further drive the command service module nearer to Skylab space station. Lets monitor the air-ground circuit for conversation across Ascension Island.

CC Skylab, Houston, through Ascension.
How do you read?

CC Skylab, Houston. How do you read through Ascension for the next 8 minutes?

CC Skylab, Houston, we're AOS at Ascension for the next 4 minutes.

SC How do you read, Houston?

CC Read you loud and clear, Pete. I've got a final TPI pad for you.

SC Okay, I'm ready to copy.

CC Okay. 007 03 5000 plus 184 plus 013 minus 072 plus 19648 plus 01205 plus 01910 0071. Go ahead.

SC 007 035000 plus 184 plus 013 minus 072 plus 19648 plus 01205 plus 019100071, and our time came out to be 734763. How does that grab you?

CC Awful close. Nobody's perfect.

CC And CDR, Houston, on the potential SCS, the ignition is at EMS counter reading of 1.0 and a trim to minus 12.6.

SC Roger.

PAO Flight Director Phil Shaffer going around the room here in the control center taking a GO/NO GO from each flight controller.

CC Skylab, Houston. We're looking at the spacecraft. Looks real good. You're GO for the TPI burn.

SC Roger, Houston.

CC And we got about 1 minute and 30 seconds, Pete, until LOS. We're going to see you at Carnarvon at 7:18.

SC Okay.

PAO This is Skylab Control. Skylab crew on Skylab II mission have passed out of contact of the Ascension Island Tracking Station. Next station will be the

SL-II MC-35/2

Time: 2:44 p.m. CDT, 00:06:44 GET
5/25/73

Carnarvon/Australia Tracking Station in approximately 21 minutes, at which time the crew will have made the TPI burn or terminal phase initiation, the acronym spells out. And that should place the command service module in a closing trajectory with the workshop with just a few additional maneuvers and breaking, and the subsequent rendezvous. At 6 hours 57 minutes ground elapsed time for Skylab II, this is Skylab Control.

END OF TAPE

SL-II MC-36/1

Time: 3:17 p.m. CDT, 00:07:17 GET
5/25/73

PAO

This is Skylab Control at 7 hours 17 minutes ground elapsed time in the mission of Skylab II. Skylab II presently in the process of overtaking the orbital workshop, Skylab space station. Less than a minute now away from acquisition at Carnarvon. During the pass over Carnarvon, we should get a report on how the terminal phase initiation, or TPI burn, went, which should have taken place at a ground elapsed time of 7:03:50, with a velocity change of 19.8 feet per second. This should have produced an orbit measuring 235.4 by 227.8 nautical miles. The next maneuver will be the terminal phase finalization, or TPF maneuver, which now is scheduled for a ground elapsed time of 7:37:28, with a velocity change of 27.2 feet per second. Resulting orbit will be 234.0 by 239.4. We'll stand by now for the Carnarvon, Australia, tracking station pass and the conversation between the crew. We'll stay live across Guam even though there's a slight gap of a few minutes. This is Skylab Control, standing by.

CC Skylab, Houston; we're AOS at Carnarvon for the next 9 minutes.

SC Roger, Houston. We had a good TPI burn on time with the following NOUN 81. Wait 1.

CC

Okay.

SC

Page open. We burned plus 18.1, plus 006, and minus 078. The burn was on time; the DELTA-VC was minus 12. The residuals that the burn added to were all balls minus 0.2 all balls. Since that time, we have had TPM 1. The final comm for TPM 1 was plus 005, minus all balls, plus 003.

CC

Roger, CDR; copied all that.

SC

We've completed the TV prep checklist.

And we will go into the rest of this when we get there.

CC

Very good.

CC

And, Pete, we still have about 8 minutes left in this pass, and we're standing by.

SC

Eight minutes. Now you get to watch our next burn.

CC

Roger; we're watching.

SC

Houston, you're looking at the DSKY.

CC

Affirm, Pete, we are. We got it.

SC

Okay.

CC

Skylab, Houston; we're about 25 seconds from LOS. We'll see you at Guam at 07:31.

SC

Okay.

END OF TAPE

SL-II MC37/1

Time: 15:29 a.m. CDT, 7:29 GET

5/25/73

PAO This is Skylab Control. Skylab 2 space-craft service module has gone over the hill from the Carnarvon Australia tracking station. Will next be seen by the Guam tracking station in the western Pacific. We'll leave the circuit up live during this short gap between Carnarvon and Guam. Crew reported that the TPI burn was on time. Minimum residuals, 0.2 of a foot per second in one axis, residuals. And if I'm reading this display right our trailing distance at this point ought to be around 35.6 miles. Current orbital period of Skylab 2 one minute 33 seconds. One hour, I beg your pardon, 1 hour 33 minutes 12.6 seconds. Current altitude 229.9 nautical miles in an orbit measuring 235.5. Apogee 227.9 nautical - and perigee. We'll stay up live for the upcoming pass over the Guam Island tracking station. This is Skylab Control standing by.

CC Skylab, Houston. We're AOS at Guam for the next 10 minutes.

SC Talleyho the Skylab. We got here in daylight at 1.5 miles, 29 feet per second.

CC Roger, Pete. Copy.

PAO TV picture beginning to come in now to the Control Center.

END OF TAPE

TV PASS WORKSHOP

SL-II MC-38/1

Time: 3:32 p.m. CDT, 7:32

5/25/73

PAO TV picture beginning to come in now
to the control center.

SPEAKER (garble)

CC GO GNC.

SC Okay. Houston, could you tell me if
the workshop is firing TACS?

CC Stand by 1; I'll check. Hang on.

SC As a matter of fact, you don't have
to tell me. I thought I was flying through clouds up here,
and everytime it fires the TACS (garble) I can see it, and
it's a big burst of gas out of it.

CC Roger. That's affirm. Pete, you're
right. We are firing.

CC And Skylab; Houston. We want quads
Bravo and Delta to the PSM when you can.

SC Just fired the TACS ...

CC Roger.

SC Just fired another one. Man, does
it shoot a big cloud out when it does that.

CC Skylab, Houston. Did you copy my request
to Bravo and Delta quads to the PSM?

SC Everything's on PSM, Houston.

CC Roger. Thank you much.

SC Hey, Houston, how do you read now?

CC I read you loud and clear, Pete. How
me?

SC Okay, I'm on VOX. You'll hear it all.

CC Okay, good.

CC And CDR; Houston. We're going to be
starting--

SC I need to start breaking right now.

CC Roger.

SC Okay, Houston, I can already see the
partially deployed solar panel. I'd say it's going right.

CC Roger. That's what we think, and CDR;
Houston. In about 1 minute we'll be starting the SWS maneuver,
and I'll let you know when we issue the command.

SC Okay.

SC (garble) right now.

SC EECOM (garble)

SC Down to 10 feet a second. No, a 1,000 feet.

CC Roger.

SC You guys getting TV, Houston.

CC Roger, Paul, we do have TB - TV, and it's
kind of hard to see right now, but it's getting better as
you get closer.

CC And Skylab; Houston. We've issued a

SL-II MC-38/2

Time: 3:32 p.m. CDT, 7:32 GET

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maneuver to the SWS. You ought to see it move a little bit.

SC Okay, I saw the TACS fire.

SC What it is, Dick, is a very high contrast target. It's hard to get that sucker right on TV so you can see anything

CC Roger; understand, Paul.

CC And PLT; Houston --

SC (garble)

CC And PLT; Houston. If you have a chance to answer, we'd like to know what the light setting is on the television; maybe it'll help us tune ours up.

SC I'm switching back and forth between peak and average to try to get it, Dick.

CC Roger, Paul; copy.

SC I'm getting the best picture on Pete, which is what you got right now. And look at it; it's just not convenient for me to get my head around to read the numbers to you.

CC No, that's okay.

SC I got to get a break, man. I don't like what's going on.

CC And PLT; Houston. Just leave it at peak lighting, and it's looking better and better to us.

SC (garble)

SC Okay, Houston, the meteoroid shield area is solid gold.

CC Roger; copy.

SC Looks rather smooth. SAS wing number 1, you can see it. It looks like it's a good 15-degrees deployed.

SC (garble) see I'm trying to handle the damn thing.

SC No.

CC And, Skylab, we're about 1 minute from LOS at Guam. We're gonna see you at Goldstone at 7:57.

SC Roger.

CC Give me a ...

SC There it is, Dick, ...

CC Roger. We're looking at it, Paul.

SC I don't see anything wrapped around it. See the outboard - see right now that the outboard solar panel is deployed partly.

SC It's nothing left over on the other side. See some tubes and wiring sticking out.

CC Roger, Pete.

SC (garble) turn off the (garble) ranging. (garble) around here. Oh, what's that? (garble) that dinkey little TV screen.

SL-II MC-38/3

Time: 3:32 p.m. CDT, 7:32 GET

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CC And Skylab; Houston. The lighting that you've got set on the TV camera right now is super. We're about - we're very close to LOS now, and you can go ahead with your photography.

SC Okay, be advised the meteroid shield is pushed up in under the SAS panel for its whole length. (garble) under that big ferry.

SC Yeah, I can see the butterfly hinge under there.

CC Roger.
SC (garble) wrapped around the top on this side?

SC ... let's go around--

SC I got to get some photos now.

SC How good are (garble)

PAO This is Skylab Control. We've had loss of both audio and television signal from the Guam Tracking Station. (garble) 14 minutes now out of Goldstone, at which time the television should resume again for a pass that will run down through Goldstone and Texas and Mila Tracking Station and Bermuda. We'll bring the circuit back up just prior to Goldstone acquisition. At 7 hours 43 minutes ground elapsed time in the mission of Skylab II, this is Skylab Control.

END OF TAPE

SL-11 MC39/1

Time: 15:22 p.m. CDT, 7:52 GET

5/25/73

PAO This is Skylab Control 7 hours 53 minutes ground elapsed time, Skylab II ground elapsed time. Here in Mission Control Center members of Skylab management and the flight control team are going over drawings and documentary photographs of the solar wing to try to speculate as to what the potential damage might be to the solar wing based upon the crews initial assessment of the damage reported during the recent pass over the Guam Island tracking station. The crew described the situation - that it appeared portions of the micrometeoroid shield had slid back underneath the - one of the solar wings but that the butterfly hinge on which the main beam swings out is apparently intact. They can see the actual hinge. They also reported being able to see the TACS or thruster attitude control system (bursts of gas being emitted, cold gas, nitrogen) when the thruster attitude control system aboard the space station would fire to maintain space station attitude during the upcoming stateside pass. We'll have a resumption of television from the command service module as they do a fly-around. And further damage assessment descriptions. Midway through the stateside pass the crew of Skylab II will be given a GO/NO GO for soft docking. We just heard a warbling sound that is the alarm that we're two minutes away from acquisition. This is the first time this alarm has been used in a mission other than simulations for Skylab. Earlier in the Skylab simulations a dark room timer which sounded much like an alarm clock was used, but now we've gone to a warbling alarm that goes off at 2 minutes prior to acquisition at each station primarily to alert the flight controllers that they should settle down and be thinking about the upcoming station pass. We'll leave the air-ground circuit up live. We're less than a minute away from acquisition at Goldstone. And we'll await the resumption of television and description by commander Pete Conrad's crew of the situation on Skylab space station as they fly around. Apparently we have had AOS at Goldstone.

SC Hey Colonel, let me rig up the TV.

CC Skylab Houston we got you AOS at Goldstone.

SC Hey Joe. Could I have the rendezvous

checklist. Dig out and load VERB 23 NOUN 22 with the docking angle.

CC Skylab Houston we're AOS at Goldstone.

We've got you for the next 16 minutes.

MS Inaudible.

SC Let me - -

SC Give me the TV.

SC - - give a brief description. As you

suspected, solar wing two is gone. Completely off the bird.

END OF TAPE

1944

1944

1944

1944

1944

SL-II MC-40/1

Time: 3:58 p.m. CDT, 00:07:58 GET

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SC ... brief description. As you suspected, solar wing two is gone completely off the bird. Solar wing 1 is, in fact, partially deployed in the rear ~~area~~ that you've got different readings. That's symmetric between your three solar panels, as there's a bulge of meteorite shield underneath it in the middle, and it looks to be holding it down. I think that we can take care of that with the SEVA. It looks, at first inspection, like we ought to be able to get it out. The gold foil had turned considerably black in the sun.

CC Roger; copy. Say again, INCO.

SC The solar SAL is clear. Hey, here's something. Hey, Houston.

CC Go ahead.

SC On the vent modules, all the covers are still intact.

CC Roger.

SC The covers did not leave the vent modules on wing number 1.

CC Copy.

SC Can't tell which way to point this son of a gun for nothing.

CC Roger.

SC Okay, Houston, are we too close or too far for you?

CC I think you're real good, Pete. We can see that whole wing.

SC Okay. Be advised that we have all four service modules spot lights on from overheat. They're reading 200 degrees.

CC Roger.

SC Why can't I find it. One thing, this TV set is too big for in here.

SC See that, Dick?

CC Roger, we're looking at it. I assume you're pointing just about in the place where the meteoroid shield is underneath the wings, is that correct?

SC Well, I'm trying to, but my picture has turned inside out and backwards, and that camera hangs up in here in that couch structure.

CC Roger.

SC Okay, Houston, it looks like the meteoroid shield, at the upper thick panel on the SAS plant, has wrapped around it just slightly. Now, my guess is that our easiest thing to do is just go to the end and try and deploy it.

CC Roger. Pete, from which side of the SAS is the meteoroid shield slight wrapped around? Is it on the side of the main tunnel, or the underside?

SC The underside, Dick.

CC Roger.

SL-II MC-40/2

Time: 3:58 p.m. CDT, 00:07:58 GET

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SC Can you see a good TV picture, or not?

SC No, I haven't been able to give them one. And they can't play it, the damn spacecraft keeps drifting. I have a hard time getting the thing to correlate it.

CC Well, hang in there, Paul. It isn't real steady, but every now and then we're getting some pretty clear views and we can replay it. And one other question -

SC Houston, white is under the gold foil next to the tank. The gold foil looks like it has been cleaned off under that meteoroid skin, too. Or no, I guess it's the Teflon from the meteoroid skin laying on the gold - under the SAS plank.

SC A worse possible frigging place for me to try to point this thing.

SC (garble)

SC Almost anyplace else. I'd like to be looking more out the window. There, that's good. That's better.

CC And, Skylab, Houston; we think that's green Teflon on the underside of the meteoroid shield that you were probably coming in on just a minute ago.

SC Yeah, that's what it is. Now, right by the scientific airlock, the aluminum - the gold foil has curled up on - at the, oh, plus-X end of it. But I don't think that'll hinder any kind of a deployment attempt.

CC Roger. And, Skylab, Houston, we request you go to P collide on the TV so we can see a little bit better down in the crevice.

SC That's where I've been, babe.

CC Okay. Fine.

SC All right, I'm getting awful close to the discone antenna, as about 5 feet sitting outside the window there.

SC And, Pete, one question that I would like to ask you and that is, you said you could see the butterfly hinge a while ago, could you tell us the condition of it.

SC Well, the butterfly hinge is underneath the (garble) wing all the way on the far side of it, and it's up.

CC Roger.

SC I mean - I didn't even notice it, Pete.

SC Oh. The meteoroid shield came loose and wrapped around it from the other side.

SC I can see it.

SC Yeah, but the one thing that's bothering me, though, is that - that if this was the wing that was down and locked, and then they opened it, that it pulled that

SL-11 MC-40/3

Time: 3:58 p.m. CDT, 00:07:58 GET

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meteoroid shield as far as it did. It pulled it 18 feet.

SC That's a hell of a good point.

SC See, and that's where it's hanging up the solar panel right at the upper vent plate. Does that make sense to you, Houston, the upper of the three vent plates, which is just below where the meteoroid shield starts, the top part of it starts, and that part is wrapped onto the SAS beam by about 3 or 4 inches.

CC Roger, Pete. And I think you gave us a real good picture of that piece of metal, just a second ago.

SC Still with us, Houston?

CC Affirmative; sure are. Still got about 9 minutes left in this pass.

SC What time is it?

SC Tell me when daylight is -

SC Night, 8:24.

CC CDR, Houston; you still got 21 minutes of daylight and it's at 8:26.

SC Now where would you like to go, anybody?

SC I gotta get away from this. Shall I get down? No, I think we've lost them.

SC No, we got it.

SC We - well -

SC All right, let's get down. I gotta get out of the way of this discone. We're going to get down and drop below it.

SC Hey, this TV doesn't work very good as far as high contrast.

SC I'll keep it cocked this way so that you can get TV out your window. But you got to tell me where I'm going over there. Well, I want to.

CC CDR, Houston. We've seen enough television to let us think a lot about this. You're cleared to turn off the TV and complete any photography you haven't gotten, and you're cleared for a soft dock.

SC Getting ready for - Reckon I got a -

SC Hey, Dick, are you there?

CC Affirm, Paul; go ahead.

SC I can't understand you, but there's that little piece that looks like a row of bolts that's wrapped up over the edge of that big ferry.

CC Roger, we see that, Paul. And if you did not copy my last - we think we have seen enough TV here; you're cleared to turn off the TV and complete your photography, if necessary, and you're cleared for a soft dock.

SC Well, the little door's open.

SC Just a little hinge door.

CC CDR, Houston; do you read?

SL-11 MC-40/4

Time: 3:58 p.m. CDT, 00:07:58 GET
5/25/73

SC Look where it tour down the other tunnel too.
See there? Another tunnel; that's clean.
CC CDR, Houston. Do you read?

END OF TAPE

SL-II MC41/1

Time: 16:08 CDT, 8:08 GMT

5/25/73

CC CDR, Houston. Do you read?
SC We haven't seen it yet. You're almost too close, Pete. Can look out - look how it's scratched. I'll back away. Look how it's scratched the gold shielding down the ward-room window. Think that whole thing tore off of there?
SC I think the key part is right where all those wires are. See them hanging out that's upper vent. If we don't get it out there, we aint gonna get it up, right.
SC A row of bolts.
SC That's our hinge line. You think that's what is left of a hinge?
SC Left a row of bolts.
SC Is that far enough out to get a good view?
SC If I look at the banjo hinge, I've gotta get down more. The banjo hinge on this side of the main tunnel is just clean wiped off. See it?
SC At the butterfly?
CONRAD Butterfly.
SC (Garble) TV camera is the worst - -
CC Skylab, Houston. Do you read?
SC Hey, look, look! Yeah,
SC I don't know (garble).
SC How's that?
SC That's good.
SC There's Don Link's experiment hanging on the side.
CC CDR, Houston. Do you read?
SC How much fuel we using?
SC Now is that good TV for you, or not.
CC Skylab, Houston. If you read, we are seeing the TV, and how do you copy?
SC A strong signal, yet. Houston, you still with us?
CC Skylab, Houston. Affirmative, how do you read?
CC Skylab, Houston. How do you read?
SC Get a picture of the top end of that thing?
SC (Garble) I'm scared to get underneath too far, there's ATM panels down there. See.
SC I'm going to start heading for the front end of the vehicle.
CC Skylab, Houston. How do you read?
SC (Garble).
CC Skylab, Houston.
SC (Garble)

SL-11 MC41/2

Time: 16:08 CDT, 8:08 GMT

5/25/73

CC Skylab, Houston. How do you read?
CC Skylab, Houston. How do you read?
SC Loud and clear.
CC Roger, Pete. We got a whole lot of good TV, there. And you're clear to secure the television and complete any photography, if necessary and you're clear for soft dock.

SC Okay, Houston, (garble) set 8:25.
CC It's 8:26, Pete. It's 13 minutes from now, you're about 1 minute from LOS at Goldstone. We're going to see you at Carnarvon at 8:56.

SC Okay. We're going to go ahead and soft dock at this time.

CC Good show.
SC Okay, you've got one more picture, here.
SC (Garble) (Static)
CC And ah - Skylab, Houston.. We think we may have an ARIA pass, although we had trouble the last time. It'll be about 8:32.

SC Okay, Houston.

SPEAKER (garble)

PAO This is Skylab Control; 8 hours, 14 minutes ground elapsed time in the Skylab 2 Mission. We've had loss of signal from this state-side pass on the beginning of the 6th orbit for Skylab 2. We'll have, perhaps, acquisition with a - an ARIA aircraft in 17 minutes, but the next primary station will be Carnarvon Station in some 40 minutes, 43 seconds. Skylab Space Station, with the command service module and crew flying around it, now crossing the northeastern coast of South America. During the fly around and damage assessment, the crew described the conditions aboard the space station, that the meteoroid shield appeared to be jamming the solar panels. And that the gold foil, which is laminated to the skin of the space station underneath the micrometeoroid shield appears to have been scorched black by the radiation, thus far, encountered in the past 10 days, or so, the space station has been in orbit. He did comment, that the solar scientific airlock, the one through which the parasol will be deployed tomorrow afternoon, was clear of any debris. He also commented, that perhaps one approach would be merely to yank on the lower end of the solar panel, to try to deploy it in that manner. And he also mentioned that a row of bolts, apparently from portions of the micrometeoroid shield appeared to be wrapped around one of the solar panels. It remains to be seen, as to how much difficulty this debris will make in freeing the solar panels

SL-II MC41/3

Time: 16:08 CDT, 8:08 GET

5/25/73

and getting them to swing outward, thereby doubling the amount of electrical power available to the space station. Now 38 minutes out of Carnarvon Tracking Station. At 8 plus 17 ground elapsed time, this is Skylab Control.

END OF TAPE

SL-II MC-42/1

Time: 4:32 p.m. CDT, 8:32 GET
5/25/73

PAO This is Skylab Control, 8 hours 32 minutes ground elapsed time in the Skylab II mission. We may have a brief exchange with the crew through an ARIA aircraft here, find out how they are doing on the soft-dock operation. Presently the space station and the Skylab II command service module are in the south Atlantic - over the south Atlantic. We'll stand by for any communications between the spacecraft and the ground, through the aircraft may be rather scratchy. That remains to be heard. Skylab Control standing by. We have contract - contact through the ARIA aircraft; however, it's not ready for voice transmission yet. Continuing to stand by, this is Skylab Control.

CC Skylab, Houston through ARIA. How do you read?

CC Skylab, Houston. How do you read through ARIA?

CC CDR, Houston. I think I cut you out.

PAO This is Skylab Control. We're still attempting to make contact with the crew of Skylab II through the range ... aircraft flying over the south Atlantic. A converted C135 jet aircraft loaded down with communications gear. We've made no contact through S-band, and apparently the VHF signal is not strong enough to overcome the noise. We'll continue to stand by, though, for the next 4 minutes until loss of signal through the aircraft relay. At 8 plus 39, this is Skylab Control standing by.

PAO This is Skylab Control. Apparently no joy in raising the spacecraft through the instrumented aircraft flying under the ground track of Skylabs I and II. We have no confirmation yet that they have soft docked. Hopefully, at Carnarvon, some 11 minutes and a half from now, we will have word from the crew confirming soft docking. And if they stay on schedule, they should be in the midst of a supper meal. At 8 hours 44 minutes ground elapsed time of Skylab II mission, this is Skylab Control.

END OF TAPE.

SL-II MC-43/1

Time: 16:56 p.m. CDT, 8:56 GET

5/25/73

PAO This is Skylab Control at 8 plus 56 ground elapsed time in the mission of Skylab II. We should have acquisition at this time with the Carnarvon/ Australia tracking station. A fairly low elevation angle pass of slightly over 9 degrees. We'll standby for the calling.

CDR Roger, Houston we had a good soft dock. We are sitting here eating dinner at the moment, and everything's just fine on the time line.

CC Real fine Pete.

CDR We been sitting here kicking around our plan of attack for the plane and I think what we are going to try to do is see how tight the metal is curled up along the upper edge of it there. Just work our way down toward the edge of the SAS panel and try and free her up from down there where we can exert the most pressure.

CC Roger Pete, copy. Why don't you guys finish your dinner and keep talking about it and we got some folks talking about it on the ground and we'll get together when we get a chance.

CDR Okay. Could you get anything out of the TV or not?

CC Yes we could Pete, and we were also had some folks taking Polaroids of it when we happened to get a real good shot. And we - we're got some folks over at Marshall taking a look at it also and we think we are in pretty good shape.

SC Okay, that's good Dick. I'm sorry about it, it was the only way I could mount the monitor. It was upside down and backwards from the way I was pointing the thing. Plus that camera almost too big to maneuver around in this window, number 2 and 4. With the lens right up against the window then the connectors actually protrude down into the couch ... and it was hanging up on the headbeam and the headrest and all that jazz.

CC Roger, well, we think we got enough. And anyway it was fun listening to you trying to handle it.

SC Yeah, you'll handle all my letters huh?

CC And Skylab, Houston, we're wondering if you get a chance if you could give us a rough estimate of what you think the CSM X-axis is between the X-axis and the Sun.

CDR Well, I can do a little bit better than that guy. Can I tell you what my docking attitude is? How does that do?

CC Okay, go ahead.

SC Okay, we are rolled about 200 degrees and we're pitched about 32 degrees and we're yaw at about 5 degrees.

SL-II MC-43/2

Time: 16:56 p.m. CDT, 8:56 CET
5/25/73

CC Roger, copy. Thank you.
CDR Okay Houston, let me ask you a question.
Nobody seemed to get too excited about these service module
quads getting hot. Is that okay? All the lights are
out now.

CC Roger Pete. We were hustling around
thinking real hard about that. We believe it was heating
during - just due to the usage you were giving them right
there and we don't think anything's wrong. And we are taking
a look now at the quantities that we have and we are going
to let you know what - what they are and what the status is
in just a second.

CDR Yeah, how much did we use?
CC My best estimate right now Pete is
about 100 pounds.

CDR You mean for the fly around?
CC That's affirm Pete. About 100 to 110
pounds during the drive around. And we're putting those
number together now Pete and I'll have a little bit of status
for you either here or one of the succeeding stations.

CDR Okay, thank you Houston.
CC Roger.

CDR We just popped out in the sunlight and
I have a good look out my window of 3 wire bundles dangling -
hanging off where the the old wing used to be. I'm also guessing
that we should be able to get a look at some portion of the
parasol when we stick it out. As I mentioned before in the
fly around I see no reason to clear any debris away from
the SAL. There is some crinkled up pieces of gold foil around
it, but that's about it. There are no hanging wires or plates
or anything like that could damage it.

CC Roger, Pete. Copy.
PLT Yeah, I see them but I don't think they
are going to be in the way.

CC And CDR we've got about 40 seconds from
LOS here. We're going to see you at Guam at 9:10.

CDR Guam at 9:10. Roger.
CC Roger.

PAO This is Skylab Control. Loss of signal
now from the Carnarvon Australia tracking station - rather low
pass over Guam - in about 7 minutes. And then a fairly solid
Stateside pass at least over Goldstone and Texas station and
a portion of the Mila station following the Guam pass as the
orbit precedes westward. Pete Conrad during the Carnarvon
pass described what he thinks the whole plan of attack ought
to be in clearing away the debris and trying to deploy the
one remaining good solar panel - at least it appears to be in

SL-II NC-43/3

Time: 16:56 p.m. CDT, 8:56 CET
5/25/73

fair shape. He wants to maneuver down the - during the stand-up EVA maneuver down the length of the solar panel cover to see high tight the metal from the micro-meteoroid shield is jammed into the mechanism, working his way down to the lower end of the solar wing to try to yank the wing loose. He reported that the crew at the time over the Carnarvon pass were eating supper on schedule. There was a discussion of what could be seen from the rendezvous windows of the command module, now soft-docked at the axial port of the docking adapter. Conrad commented that wire bundles could be seen hanging out from where one of the solar panels should have been. It was estimated on the ground that about anywhere from 100 to 110 pounds of reaction control system fuel. An oxidizer had been used during the fly-around and inspection. We're some 4-1/2 minutes out from acquisition at the Guam Island tracking station in the western Pacific. Guam pass is about 5 minutes 57 seconds - 56 seconds long, elevation angle of slightly over 8 degrees. Then we come across Goldstone at a fairly high angle and Texas and Mila. And at 9 hours 6 minutes ground elapsed time in the Skylab 2 mission, this is Skylab Control.

END OF TAPE

REFERENCE IN APPENDIXES

SL-II MC-44/1

Time: 17:09 CDT 09:09 GET
5/25/73

PAO This is Skylab Control. 9 hours 9 minutes, ground elapsed time in Skylab 2 Mission. Less than a minute out from Guam. We'll stand by to hear whether the crew of Skylab 2 has any further comments on assessment of damage during their flyaround, in between bites of their evening meal. Here in the Control Center Polaroid pictures made of the TV monitors are being studied for some insight into the apparent damage caused by the sloughing off of the micro-meteoroid shield at launch. Here's a call to the crew.

CC - The next 12 minutes.
CDR Roger, Houston.
CC Skylab, Houston on VHF, request you select Omni Bravo.

CC Skylab, Houston, request Omni Bravo.
CC Skylab, Houston. We still have several minutes left in Guam pass. I think we dropped out because of a shading problem on the OWS. How do you read?

CDR Okay, we read you loud and clear, now, we wondered what happened to you.

CC Well, we just hid for awhile there.
CDR Boy, I've had some big things on my noses in space before, but this is by far the biggest. It sure beats the Agena or the LM.

CC Roger.
CDR Dinner's going pretty good, except Paul's found another one of them tree trunks in the asparagus.

CC Roger.
CDR Say, while we got you, we might comment a little bit about some of the new stuff we've run into today, like some of the food in the cans. I had stewed tomatoes for lunch. I'd be betting they would be real hard to handle up here, and it turned out that even as goopy as they are, they were real simple to handle, and the same way with the other less viscous materials that we've had on our lunch today, like the turkey and gravy, and the chicken and gravy.

CC Roger, Pete, that sounds real good. We're about to go LOS here at Guam in about 15 seconds. We'll see you up at Goldstone at 9:33, and I'll have some words there on your RCS quantities.

CDR Okay.
CC And Skylab, Houston. Be advised that we'll be standing by at Goldstone, and we'll try to get the logic sequence check out of the way.

CDR Okay. Houston.

SL-II MC-44/2

Time: 17:09 CDT 09:09 GMT
5/25/73

PAO This is Skylab Control. We've had loss of signal through the Guam tracking station. During the early part of that pass over Guam, apparently the bulk of the workshop was blocking reception and transmission by the Command Service Module on the antennas. Once the spacecraft came out of the workshop's electronic shadow, the communications were fairly crisp. Most of the comments had to do with the critique of how the food they are presently eating is manageable in a zero-G environment. Conrad commented that Paul Weitz had found a tree trunk in his asparagus, and that even though he had anticipated the stewed tomatoes would be rather difficult to handle, he found they were much easier than he expected, even though they were somewhat soupy. Goldstone in 15 minutes. At 9 hours 18 minutes, ground elapsed time in the mission of Apollo, as you were, Skylab 2, I knew I'd do it, this is Skylab Control.

END OF TAPE

SL-II MC-45/1

Time: 17:23 CDT 9:32 GET

5/25/73

PAO This is Skylab Control. Nine hours 32 minutes ground elapsed time. The Skylab II mission less than a minute away now from acquisition at the Goldstone tracking station, crossing through Texas and the edge of the Mila station. And we'll start picking up the tracking ship, Vanguard this revolution for 3 successive passes. Vanguard is off the southeast coast of South America. During the pass over Vanguard later and this revolution, we should get a GO/ NO GO for the standup EVA and damage repair. We're getting a freeze frame playback of the television from the spacecraft. We'll switch that out to the News Center now. We're standing by for resumption of communications to the spacecraft through the Goldstone station. At 9 plus 34 ground elapsed time, this is Skylab Control standing by.

CC Skylab, Houston. We're AOS at Goldstone for the next 14 minutes.

CDP Okay, kind of breaking up Houston. Maybe it's our antenna pattern. I noticed we're kind of on top of the SWS, looking down at the world.

CC Roger, understand. While we take a look and make sure we have good data before doing the sequential logic checks, I have a couple of 3 things I'd like to mention to you.

CDR You're breaking up badly, Houston.

CC Skylab, Houston, request duplex Bravo.

CDR Okay, duplex Bravo.

CC And be advised I'm reading you loud and clear.

CDR Okay, you're breaking up.

CC Skylab Houston. We're go on the sequential logic check. Stand by one.

CDR You're breaking up Houston. Understand you want to do the logic sequence check. Is that right?

CC Negative. Stand by one.

CC Skylab Houston. Affirmative, we are ready for the sequential logic check. Go ahead.

CDR Okay, the segs logic - two of them are off. The segs pyro alarm, two of them are safe. And the segs ZB6 logic, two of them gone closed. They are closed. And the segs arm cb gone closed.

CC Roger and we are ready for sequential logic two of them on up.

CDR You got the logic one and two.

CC Roger.

CC Skylab Houston. It looks good. You're go for pyro arm.

SL-11 MC-46/1

Time: 17:42 p.m. CDT, 9:42 GET

5/25/73

CC
select best omni.

Skylab, Houston, if you read, request

CC
select best omni.

Skylab, Houston. If you read, request

CC

Skylab, Houston. How do you read?

CC

Skylab, Houston. How do you read?

CC

Skylab, Houston. How do you read?

CDR

Loud and clear.

CC

Roger, Pete. Read you loud and clear

now, we've been having our problems here on the ground. We've still got about 3 minutes in this pass.

CDR

Okay, what is it you want to tell me?

CC

Okay. What I wanted to tell you was

is that originally we had allowed about 400 pounds for the SEVA, RCS, and right now we're about 140 pounds down from the flight plan so that still leaves about 260 pounds which is well more than twice what you spent on that whole drive-around before. And that allowance still protects both the RCS deorbit redlines and so in essence you're fat on RCS, but I - just be advised those are the kind of numbers we're looking at.

CDR

Okay.

CC

Incidentally also we believe that your onboard readings of Bravo and Delta may be about 5 percent high when we run it through the computers here on the ground. And the PSM reading is off-scale half high and actually you have about 70 percent, 70 percent remaining.

CDR

Okay.

CC

And Pete, while I've still got you here, our preliminary recommendation is - I think goes along with yours - and that is the first try should be just pulling at the bottom of the beam. And I guess our recommendation as far as tool configuration might be 1 pole with the SAS hook, one with a cable cutter, and one with a mushroom and tether.

CDR

Okay. You want us to pull on the bottom first. We'll give her a go.

CC

Roger.

CC

Roger, Pete. That's affirmative and that is a preliminary recommendation and we'll see you again at Vanguard. We've got about a minute and 20 seconds to LOS, and Vanguard is at 9:58 - about 10 minutes.

CDR

Okay, we're on SEVA L 1 - 2 - we've all eaten and we're right at the bottom of the page - we're reconfiguring the spacecraft and cleaning it up.

CC

Very good, we'll see you at the Vanguard.

PAO

This is Skylab Control. Space station

SL-11 MC-46/2

Time: 17:42 p.m. CDT, 0:42 GMT

5/23/73

and the docked command service module with the crew aboard now crossing over the Isthmus of Panama. Some 9 minutes out of acquisition by the tracking ship Vanguard lapping over into a somewhat scratchy relay aircraft flying off the coast of South America. Had some communication problems during the Stateside pass which we hope will be resolved by the next time around. Flight plan calls for a GO/NO GO for the standup EVA to repair the damage and attempt to swing out the remaining solar wing. This GO/NO GO will be given over the Vanguard tracking ship. We have a real-time playback of the fly-around television being switched out now to the news center. Back up on the line at Vanguard acquisition in 8-1/2 minutes. At 9 hours 51 minutes ground elapsed time, this is Skylab Control.

END OF TAPE

SL-II MC-47/1

Time: 17:58 CDT 09:58 GET
5/25/73

PAO This is Skylab Control, 9 hours 58 minutes, ground elapsed time, mission of Skylab 2. About a half minute left of daylight before the spacecraft goes into darkness on this revolution. About a half minute away from acquisition by the Vanguard tracking ship off the coast of South America. We should be getting a GO/NO GO for the standup EVA plus some additional instructions to the crew, and suggestions on how to best go about the task, through the Vanguard. Stand by now for the CAPCOMs call.

CC Skylab, Houston at the Vanguard. How do you read?

CDR Loud and clear, Houston.

CC Roger, Pete.

CC We're about halfway down 1-3, Houston, doing helments, and I think we'll make it just about on time.

CC Real good, Pete, we've talked about a lot of things here on the ground, but I guess about the only thing we feel like passing up is the fact that we probably think if that piece of metal that's bent over the wing is indeed a little piece of angle iron, that you probably cannot cut it, and so if you want to get it out of the way, you'll probably have to bend it out of the way, but it'll be strickly your call, when you guys get out there.

CDR It's not bent up over the top of the SAS, beam, it's just bent along the side of it, with just a curl over the top and it didn't look like it had any iron beam structure in that part of it.

CC Roger. Sounds good, and we'll just leave it to your call as to how to get it done.

CDR Okay. Paul tells me it was an angle in there. I didn't see that.

CC Skylab, Houston. We've looked at the spacecraft data on the ground. It all looks good to us. You're clear for a local flight. Have fun and fly safe, and we'll see you at the next pass.

CDR Okay.

CC Skylab, Houston. We're about 1 minute from LOS. We'll see you at Goldstone at 11:10.

CDR Okay, Houston.

CDR Houston, be advised for some reason we seem to have stabilized lower left corner in the docking target, which says that we are resting on about the 7:30-8:00 position of the docking ring or something, looks like. We're off to one side. We've just stayed put.

CC Roger. Copy.

SL-II MC-47/2

Time: 17:58 CDT 09:58 GET

5/23/73

PAO This is Skylab Control at 10 hours 8 minutes, ground elapsed time in the mission of Skylab 2. During this just completed pass over the tracking ship, Vanguard, the crew of Skylab 2 was given a GO for the standup EVA to attempt to repair the damage, and free the remaining solar wing, which generates electrical power. The recommendation was to attempt to bend back what appears to be an aluminum structural angle, a portion remaining from the micro-meteoroid shield structure, at any rate, to bend it away from its wrapped position over the solar panel beam, then y down to the lower end of the beam and attempt to pull it away from the Skylab workshop, and swing it out to its 90 degree position, at which time the solar panels should unfold, at least putting the workshop cluster on three quarters of the normal electrical power availability. The CAPCOM, Dick Truly, gave them a GO for what he called a local flight. We're an hour away from the next acquisition at a tracking station, which will be Goldstone. And the crew, according to the time lack, should be just in the process of closing the hatch and depressurizing the Command Module, after hopefully doing a successful job of freeing the solar panel. At 10 hours 11 minutes, ground elapsed time, this is Skylab Control.

END OF TAPE

SL-II MC-48/1

Time: 1900 CDT 11:00 CXT

5/25/73

PAO This is Skylab Control. Eleven hours ground elapsed time in the mission of Skylab II. Presently flying just south of the Aleutian Island chain in the north central Pacific. Eleven minutes out of Goldstone acquisition. As we come up on Goldstone, they should be, according to the time line, just in the process of closing the hatch and repressurizing the command module after doing the so called SEVA or standup EVA to attempt to repair and deploy the solar panel, the one remaining solar panel. The earlier fly around television was used in attempting to trouble shoot and analyze what repair work was feasible by making sketches from freeze-frame playback of what the apparent damage was and what pieces of debris might be holding back the main beam of the solar panel. Comparing these sketches with the engineering drawings and photographs, it was surmised that a portion of the micrometeoroid understructure, namely a piece of aluminum angle had been wrapped around the beam. Therefore, it was recommended to the crew that they attempt to straighten out the piece of angle which in turn would free the beam. And should the beam be successfully swung out to its 90 degree point, and the solar panels unfold, there is every confidence here that it will generate the required or its designed load of electrical power into the cluster power generating system. Slightly over 100 pounds of reaction control system fuel were burned during the fly around maneuvers and damage assessment. This is slightly below the programmed flight plan quantity - remaining number. However, it still leaves a comfortable margin for any contingency reaction control system deorbit maneuver that might become necessary at the end of the mission. If for example the main propulsion engine, the SPS engine on the service module fail to ignite. The orbital workshop at this time remaining essentially unchanged in its temperature and pressure conditions. We have no data coming in now on the workshop. Inasmuch as we're out of contact - off the range, be coming across Goldstone in 7-1/2 minutes. Out of some 28 minutes remaining until spacecraft sunset. At 11 hours 3 minutes ground elapsed time, this is Skylab Control.

END OF TAPE

SL-II MC-49/1

Time: 19:10 p.m. CDT, 11:10 GET

5/25/73

PAO This is Skylab Control, 11 hours 10 minutes ground elapsed time. Less than a minute away from acquisition through the Goldstone tracking station - 18 degree elevation angle maximum on this Goldstone pass, just slightly over 2 degrees grazing along the edge of the Texas acquisition circle. There's a gap before pass over the Vanguard at a fairly high angle. Hopefully we'll get a report on the standup EVA from the crew during this pass over Goldstone. We still are 21 minutes away from sunset on the spacecraft. We'll stand by now for the initial call from CAP CON up to the crew and see how the standup EVA went.

SC Ah, there it is.

CDR It looks to me like it's clean underneath there except that spot, huh?

SC Yeah.

CDR Is there a black piece that's curled up due to the lip next to the green?

SC I don't understand what you're talking about.

CDR Hell I can't see it. The fucking hatch is in my way.

CC Skylab, Houston, we're AOS at Goldstone for 10 minutes. (Laughter)

SC I don't think it's that green thing that's hanging it up. I think it's up further to the right just a little bit which I'm drifting towards.

PLT Don't go too much further to the right.

CC Rog.

CC Skylab, Houston we're AOS at Goldstone.

CDR Now it's down underneath there where it's hung up.

PLT Do you see that?

PLT Might be.

CDR Along that old pole - bold edge. (garble)

CDR Maybe we ought to - -

PLT No, let me trade tools, Joe. I'm trying to get the - - ... I gotta get the ...

CDR I've got a cutoff point here in about 12 minutes.

PLT Then what?

CDR I gotta get the hell back. We'll be in night.

CC Skylab, Houston we're AOS at Goldstone.

CDR See where that piece comes from.

PLT ... my couch.

PLT B, I'm sure.

SL-II MC-49/2

Time: 19:10 p.m. CDT, 11:10 GET
5/25/73

PLT Look I see the piece folded up over the
edge with the wires coming out of it.
CDR That's the one I'm talking about.
CDR That's the one I was talking about. It's
green.
SC Yeah ...
CDR Now there's another piece further back
to the right isn't there?
CDR Goddamn. I asked you what's happened?
SPT Can I ask you what is happening?
SPT We're trading tools.
CDR ... for?
SPT Huh?
CDR What are you trading for? The pick?
PLT The prong thing.
CDR All right, that's going to have to be
it, Paul.
PLT I understand.
PLT They aren't maneuvering this son-of-a-bitch
are they?
CDR I don't know.
PLT How're you doin Joe?
SPT All right, got the one off, got the
other one coming.
CDR Yours is going by. Hey listen we're
running into dark. Pretty fast.
CC Skylab, Houston we're AOS at Goldstone.
How do you read?
CC Skylab, Houston. If you read we are
AOS at Goldstone.
PLT Plunger pointed to your right.
CDR Okay.
PLT Have you got a hold of my foot down there?
SPT Yeah.
CDR Just hold the one foot. This one.
SPT I can't hold the foot but I can hold the
knee.
PLT All right that will probably be just
as good for you.
CDR Tell me where to go.
PLT Head for that piece that's wrapped around.
CC Skylab, Houston, if you read we're AOS
at Goldstone.
PLT Do you see that tool?
CDR Yeah.
CDR Take a look at that window. Is that
window clean?
PLT What window?

SL-11 MC-49/3

Time: 19:10 p.m. CDT, 11:10 GMT

5/25/73

CDR The wardroom window.
PLT Yeah.
CDR You're sure.
PLT Yeah.
CDR No cracks?
PLT No.
CC Skylab Houston, if you read, we're AOS
Goldstone.
CC Skylab, Houston. How do you read?
PLT Better get down a little more, Pete.
PLT Whup, whup, whup - not out - not out.
PLT Hey, that's what's doing it that son-of-a-bitch is poked in there like it's nailed in.
PLT Wait a minute - hold it - don't go in any further.
PLT I gotta get my god damned tool out.
PLT Oh shit.
CC Skylab, Houston. How do you read?
PLT That's what's doin it Pete - -
CDR Can you pry it? With a tool?
PLT Stick it in here and bend up?
PLT That's what I was just doing.
CDR I mean pry, you know.
PLT Push up?
PLT I don't have that much control over it
Pete.
PLT Oh shit.
PLT Have you got a hold of my legs Joe?
SPT Yeah.
PLT One of them?
SPT One of them. Good.
CC Skylab, Houston. We're at Goldstone
AOS for 5 minutes.
CDR Okay Houston. How soon to sunset? Quick.
CC Roger. We're 15 minutes from sunset
right now. MARK.
CDR Okay, the little tiny strap which goes up by the top bench. It's flying around so hard that the screws in it just riveted into the SAS panel. We pulled as hard as we could on the end of the SAS panel. We couldn't get it out right now. We're station-keeping in spite of the SAS panel - we're all trying to break it loose - the little tiny strip ... in the - 1/2 an inch wide, but man is it riveted on.
CC Roger, I understand Pete. And I'll keep you advised about the time to sunset. Right now we've got about 4 minutes to LOS and about 14 minutes and 15 seconds

SL-II MC-49/4

Time: 19:10 p.m. CDT, 11:10 GET

5/25/73

to sunset.

CDR Okay. I'm going to have to quit pretty quick.

PLT Pete?

CDR Yeah.

PLT I hate to say it, but we ain't going to do it with the tools we got.

PLT ...

PLT Don't worry about it.

CDR Back off here.

CDR Well it's better than maneuvering around him.

PLT Where's the ...

PLT It's over to your right.

PLT Joe, if you could just hold the end.

SPT Okay.

PLT I'll take the 2 ... apart.

PLT Okay.

PLT Where do they come apart?

SPT It must be that way.

PLT Okay. It's all yours.

SPT Thank you.

CC Skylab, Houston. We're 13 minutes to sunset.

CDR Got you, 13 minutes to sunset, Houston.

CDR ... watch it you're knocking thruster switches and everything else. Get that pole down out of there.

CDR Okay, Houston, the problem is the tools wouldn't do the job. We're going to have to give up on it, but I really feel bad because it's just one more tiny old inch strap. But boy, did it rivet itself to the side of this thing. Hey, Dick.

CC Roger. Go ahead.

PLT What it is is a piece of angle where the sections of the meteoroid shield - - It runs right down next to it. It's wrapped around it just below the uppermost ... module - and it's wrapped around it over the rivet line over to the right to about 2-1/2 feet and that beam does not bend and I can't budge that strap. That ... little strap that's wrapped around it.

SPT What is it that's - - ... Watch it, Joe.

PLT Where's the ATM?

SPT To your right. You're clear to move directly to the right. Right. Okay.

PLT Let me get around and start the hatch in.

SL-11 MC-49/5

Time: 19:10 p.m. CDT, 11:10 GET

5/25/73

in.

PLT Can I move to my right, Joe?
SPT ...
CDR It is so frustrating to see such a little
tiny thing hold that baby on there.
SPT Yeah.
PLT Darn.
PLT Hey, you got the cue card?
SPT Yep.
CC Skylab, Houston, we're about 11 minutes
and 15 seconds to sunset. We're going to see you at the Van-
guard.
SPT Instructions? I sure don't see any.
SPT Unstow lanyard, pull and close the hatch.
PLT You're going to have to hang on to my
bottom feet there again.
SPT All right.
PLT Shoot. Wait a minute. Just let me
hook them in --
PLT All right.
SPT I've got one foot between two of my
legs. Now let's see if that works.
SPT Oops, that hit me right in the head.
CDR ...
SPT Nope, wait a minute.
PLT There you go.
SPT hey, God darn it!
PLT I'm sorry.
SPT No, I know you are. I realize that, but
I can't. It's very hard when you are trying to fly --
PLT I've got to close this son-of-a-gun ...
PAO This is Skylab Control at loss of signal
from the Texas station, still 14 minutes until acquisition
by the tracking ship Vanguard. Skylab 2 crew apparently un-
successful in bending back the aluminum angle. What Pete Conrad
described as running some 2-1/2 feet and along the edge of the
solar wing beam, that the tools that were carried aboard were
inadequate for removing this rather husky piece of angle. He
was concerned somewhat about the remaining daylight time. Get-
ting down now at about 9 minutes of daylight left on this rev-
olution before the spacecraft crosses into darkness. We'll
listen at the Vanguard pass for any further comments from the
crew on their success or lack thereof in freeing the electrically
generating solar cell wing. At 11:24 ground elapsed
time, this is Skylab Control.

END OF TAPE

100-1-307-100

SL-11 MC-50/1

Time: 19:36 CDT 11:36 GET

5/25/73

PAO This is Skylab Control 11 hours 36 minutes ground elapsed time. Skylab now coming over Vanguard tracking ship, in the southwest Atlantic off the coast of South America. We were reading heart rates on the pilot, Paul Weitz, between 110 and 120. I think the crew is talking now, let's join them.

CDR We're a little over four right now. I've made two attempts to get a soft dock and now I can't get one and we are just about to start through the emergency procedures and stand by for any of your suggestions.

CC Roger Pete, copy.

PLT Okay, let me read you this Pete. The second docking attempt - withdraw to formation distance PROBE EXTEND RELEASE to EXTEND RELEASE for 5 seconds then to RETRACT.

CDR 1, 2, 3, - 5, 6. RETRACT. Okay?

PLT Attempt redocking. Then contact, go plus-X until capture.

CDR Roger, here we go.

CDR I may not have held it 5 seconds.

PLT Hold plus-X until we get capture or a reasonable time.

PLT Get it?

CDR No.

PLT The bugger stayed gray, huh?

CDR Now we got a third and final docking attempt, okay. And you've got positive indication and no capture, right?

PLT Yeah.

CDR Okay. This time ...

CC Skylab, Houston.

CDR ... Go ahead.

CC Skylab, Houston. Just a reminder, you're configured two-jet and you might need four-jet to get there, and capture.

CDR Well I didn't the last time, we'll recycle it again. Let's see EXTEND RELEASE switch for 5 seconds, then 2, through OFF to RETRACT, correct?

PLT I'm going off VOX.

CC Skylab Houston. You might check panel 8 DOCKING PROBE circuit breakers and they should go EXTEND-RELEASE and then RETRACT and get Barber Poles in all positions.

CDR Okay, now, the docking probe circuit breakers are IN. You mean when we get soft capture we should get Barber Poles?

CC That's affirmative.

SL-II MC-50/2

Time: 19:36 CDT 11:36 GET

5/25/73

CDR Okay.
CDR Well go to 4 jet ullage and we'll give it a try. When it can be.
CDR We had the breakers out, now shall I cycle the breakers and go through the whole thing - cycle the breakers, extend release for 5 seconds, then to retract 4 jet ullage. Okay?
CC Roger Pete, we concur with that procedure.
CC CDR Houston. One more suggestion on panel 229, 2 breakers EPS GROUP 4, panel 229.
CDR Okay, 229 EPS GROUP 4. We're checking.
CC Roger.
CDR And they're verified CLOSED.
CC Roger.
CDR Okay Houston, that didn't do 't.
CC Roger, copy.
CDR Okay, we're down to the third procedure Houston, about hold the EXTEND RELEASE switch and then go to RETRACT.
CC Roger, copy Pete.
CC Skylab Houston. We're about 30 seconds from LOS at Vanguard. We have a potential ARIA pass after a short break in just a few minutes. And if we miss that one, we got Hawaii at 12:44.
CDR 12:44 okay. If we miss you at ARIA, we'll see you in an hour. And I guess we'll try this third one and I guess the fourth one is another super duper EVA, right?
PAO This is Skylab Control. We'll leave the circuit up for any possible communication through the ARIA aircraft which is flying along the ground track to the east of the tracking ship Vanguard. If that is unsuccessful, and we get no communications through this aircraft, we'll be about an hour before we come up on Hawaii. The orbit precessing westward all the time takes us off the range and the tracking stations at this particular time of the orbital day are few and far between. The flight controllers here in the Control room are discussing any possible methods for trouble shooting the probe and drogue difficulty in getting the capture and the hard docking. Conrad said that he would attempt a few more times to hard dock. He's got another night eighteen minutes of darkness before coming around in the daylight again. Current orbital measurements on the command service module perigee 233.9 nautical by 240. Orbital period 1 hour 33 minutes 9 seconds.

END OF TAPE

SL-11 MC-51/1
Time: 19:49 CDT 11:49 GET
5/25/73

PAO Still standing by for a word from the network controller as to whether or not we're receiving a downlink from the spacecraft through the ARIA range aircraft. We'll monitor until the ARIA time has passed.

CC Skylab, Houston. How do you read through ARIA?

CC Skylab, Houston. How do you read through ARIA?

CC Skylab, Houston. How do you read through ARIA?

(garble)
CC Skylab, Houston. How do you read through ARIA?

PAO This is Skylab Control 12 hours 1 minute, ground elapsed time. Some 44 minutes away from Hawaii tracking station. The crew of Skylab 2 is presently having some difficulty in redocking with the workshop actual docking port. The suggestions made on the ground during the pass over Vanguard tracking ship was that perhaps they needed to go back to four jet on the reaction control system. Four jet maneuvering to drive the spacecraft in somewhat firmer into the probe and drogue. Drive the probe into the drogue assembly in the docking port for more chance of capture, however that procedure, did not, apparently work. During this loss of signal period until Hawaii, Conrad is going to make a couple of more attempts, going through the emergency docking procedures. Alternate schemes are being discussed here in the Control Center, but no prime method of troubleshooting has surfaced yet. It may be some time before the problem is resolved, because of the lack of communications during the time that the spacecraft is on the backside of the orbit, having very few tracking station passes. One scheme that's under discussion, but not by any means decided upon, was for them to go hard suit, that is repressurize the suit loop, depressurize the cabin, remove the hatch, pull in the drogue, and troubleshoot it similar to the way that way that the probe was worked on during Apollo 14, when they had difficulty in initial docking. At 12 hours 3 minutes, ground elapsed time, and 41 minutes away from Hawaii, this is Skylab Control.

END OF TAPE

SL-11 MC-52/1

Time: 20:21 CDT 12:21 GET

5/25/73

PAO This is Skylab Control, 12 hours 21 minutes ground elapsed time. Skylab Space Station and the Command Service Module of Skylab 2 at last contact attempting to redock with the space station are now over the Asian Continent, some 23 minutes away from acquisition at Hawaii, as the orbits precess westward, we'll have two successive passes across Hawaii and the Vanguard tracking station, those being the only two stations this particular time of the day. At last contact over the Vanguard tracking station the crew of Skylab 2 was having difficulty in redocking. They had made several attempts, and were going down through the backup procedures for retracting and extending the probe. Several suggestions were made from the ground, such as going back to four-jet maneuvering on the reaction control system thrusters, whereas they had been only on two-jet thrusting during the standup EVA, to prevent the RCS plume from striking the pilot as he stood in the hatch. That is the situation at the moment. The management people and flight controllers are discussing and considering the various alternatives to getting a successful docking. And hopefully at Hawaii acquisition we should have word on whether during the past period of no contact, they have indeed become docked with the space station. 21 minutes remaining until Hawaii acquisition, and 41 minutes remaining of this dayside pass. At 12:24 ground elapsed time, this is Skylab Control.

END OF TAPE

SL-II MC-53/1
Time: 20:37 CDT 12:37 GET
5/25/73

PAO This is Skylab Control, 12 hours 37 minutes, ground elapsed time. We're some 8 minutes out of Hawaii on the Skylab 2 eighth Earth orbit. Currently the Command Service Module orbit is 234 nautical miles at perigee by 240 at apogee. Orbital periods still remaining at 1 hour 33 minutes 9 seconds. As we come up on Hawaii, it is hoped that the crew of Skylab 2 has been successful in redocking with the workshop through the actual docking port. Apparently the extended probe was not latching properly to pull the spacecraft into the docking port. And at the present time the crew should be running through back-up procedures to effect a hard docking. Other schemes are under consideration here in the Control Center, should the backup procedures fail to work, including such things as the crew going back into their suits, depressurizing, removing the forward hatch, retracting the drogue, collapsing it, bringing it inside the cabin, and doing some troubleshooting on it before reinstalling it. Also, the systems engineers here are looking at any possible problems in the spacecraft logic circuits, whereby any so-called glitch could be bypassed by closing off certain electrical circuits, circuit breakers. As the evening wears on, we'll eventually sort out what the problem is with the docking system, and now we're 5-1/2 minutes away from acquisition at Hawaii. The workshop cluster and Command Service Module flying across the northern Pacific, just south of the Aleutian Island chain. At 12 hours 40 minutes ground elapsed time, this is Skylab Control.

END OF TAPE

SL-II MC-34/1

Time: 20:44 CDT 12:44 GET
5/25/73

PAO: This is Skylab Control, 12 hours 43 minutes ground elapsed time. We have had acquisition of signal through the Hawaii tracking station.

CDR Skylab.

CC Roger, Pete. What's your status?

CC Skylab Houston. How do you read? And what's your status please?

CDR Roger, we read you loud and clear. And the status is that we worked our way through the three docking methods and none of them worked. Be advised that on the third method, when we had the switch in EXTEND RETRACT and had the probe and drogue thrusting forward we had barber poles but when we would go to retract I would continue thrusting and they would go gray and we would not get a capture. So we are at this point stationkeeping. Do you read?

CC Skylab Houston. We have got to maneuver the SWS to get out of this attitude. Request you stand off, we're going to have a maneuver time of 10 minutes. The maneuver is going to be a pitch down of about 8 degrees and a roll of about 31 degrees. Over.

CDR Okay, I'd prefer to maneuver right with it, so go ahead.

CC Roger. We'll let you know when we command it.

CDR Okay.

CC And Skylab Houston. We're going to start the command sequence now to do the maneuver.

CDR Okay. Have you got any thoughts on a docking?

CC Affirmative CDR. What we'd like to do first though is we need some more data at high bit rate. Let me make sure we've got it set up here and then I'd like you to go through a short procedure.

CDR Okay.

CC Okay. Pete, here's what we'd like you to do, while we're looking at the data. On panel 8 make sure that the 2 circuit breakers, DOCKING PROBE, MAIN Alpha and MAIN Bravo are CLOSED. We had some static Pete. Did you copy that?

CDR Hello.

CC Roger Pete. Circuit breakers, 2 of them MAIN A MAIN B on panel 8 CLOSED.

CDR Hello Houston.

CC Skylab Houston. How do you read?

CDR Okay, what happened?

CC Roger, we kept dropping out.

SL-II MC-54/2

Time: 20:44 CDT 12:44 GET
5/25/73

CC Okay, circuit breakers, 2 of them, on panel 8, DOCKING PROBE, MAIN A and B, make sure they are OPEN.

CDR Okay, they're open.

CC Okay. We want you to give us a cue and close MAIN Alpha.

CDR Okay.

CDR MARK, MAIN Alpha.

CC Roger.

CDR Do you want high bit rate?

CC We have it Pete. And now give us a mark and close MAIN Bravo.

CDR Roger, 3, 2, 1 -

CDR MARK, MAIN Bravo.

CC Roger, okay. Let me tell you these next few sequences Pete. We're going to want a mark. We want you to go to EXTEND RELEASE on the EXTEND RELEASE switch for 5 seconds, then OFF for 3 seconds, then back to EXTEND RELEASE for 5 seconds and repeat that procedure 3 times. And we need a mark each time. Go ahead.

CDR Okay, coming up, just a second.

CC Okay.

PLT Okay Dick, Pete's maneuvering. I understand you want to go to EXTEND RELEASE for 5 seconds and then back to which for 3 seconds?

CC That's OFF for 3 seconds and repeat that 3 times and be sure and give us a mark as you do it.

PLT Okay. It's in OFF now. I just went from RETRACT to OFF. Okay, you ready?

CC Affirm.

PLT Okay stand by.

PLT MARK.

PLT MARK, OFF.

PLT MARK, EXTEND RELEASE.

CC Roger.

PLT MARK, OFF.

CC Roger.

PLT MARK, EXTEND RELEASE.

PLT MARK, OFF.

CC Roger. Thank you very much and stand by. One quick note, we're going to stay on a PET time scale. The next pass is Vanguard at 13 plus 12. And we've still got 2-1/2 minutes in this pass.

CDR Okay, you guys got any clue as to what might have happened? We had a perfectly normal soft dock and undock and then just nothing.

CC Pete, we are changing a theory and we didn't have real good data the time before, but when you went to extend release before and held it in the extend release position we saw no increase in current. And we think we should have seen an increase. One possible cause of this

SL-11 MC-54/3

Time: 20:44 CDT 12:44 GET

5/25/73

is that one of the extend motors has failed ON, causing the capture latches to stick in the release position. And based on this data here, we're going to think about it some more. And we are coming up with an alternate procedure.

CDR Okay.

CC Skylab Houston. What we suggest you try is attempt a docking with both circuit breakers pulled. If you get a capture, close one of the circuit breakers and attempt to retract. If that does not work, try the same procedure and use the other circuit breaker. Over.

CDR Okay, understand try a docking with both breakers out. Is that correct? And then capture, one breaker in.

CC That's affirm and then attempt to retract.

CDR Okay.

CC And we're going LOS. We'll see you at Vanguard.

CDR Okay.

CC Skylab Houston. If you are reading, we'd like to delay until Vanguard.

CDR Roger.

PAO This is Skylab Control. We had loss of signal through Hawaii. Twenty minutes out of Vanguard tracking ship. On the 8th revolution of Skylab II. One conjecture here on the ground was that one of the motors in the probe which extends the probe had possibly failed while running. Or failed ON. And that the capture latches had stayed open instead of in the cocked position. Toward the end of that pass, a procedure was worked up to the crew in which they would open some circuit breakers, extend the probe, attempt to capture, and then recluse the breakers. We'll come up again over Vanguard to see if this method is successful in completing the hard docking of Skylab II to the space station. Toward the very call end of that pass, because of some qualms on the part of the spacecraft engineer they asked them to hold off on that procedure until Vanguard. And we think we got an acknowledgement from Pete Conrad that he would hold off. Eighteen minutes away from Vanguard at 12:55 ground elapsed time. This is Skylab Control.

END OF TAPE



1. The first part of the document is a list of names and addresses, which are arranged in two columns. The names are written in a cursive script, and the addresses are written in a more formal, printed style. The list is headed by the word "List" in a large, bold font.

SL-II MC-55/1

Time: 21:12 CDT 13:12 GET

5/25/73

PAO This is Skylab Control, 13 hours 12 minutes ground elapsed time. Skylab workshop and Command Service Module bearing the end of revolution number eight, should be crossing over into the acquisition circle of the tracking ship Vanguard. We'll stand by now for further conversation on the problems in redocking with the workshop. And the Capcom has still another procedure to be read up to the crew on possible means of working around the apparent failure of the docking probe to capture properly, the latches to capture. We'll stand by for this pass, which lasts for almost 10 minutes.

CC Skylab, Houston, we're AOS at Vanguard.
How do you read?

CDR Okay. We're loud and clear here.

CC Okay, Pete. Let me read you this procedure. I assume you did not try it after we went LOS last time.

CDR No. You said not to.

CC And Pete, we want to confirm you're a little bit away from the SWS, because we are going to have to be doing a little commanding.

CDR Well, it's night, Ed, what do you want to do?

CDR Now, what are you gonna do?

CC CDR, Houston. We do not expect any maneuvering. We are going to reconfigure the RATE CYROs, and I have a procedure I'd like to read to you.

CDR Okay. Go ahead.

CC Okay. Here's what we want you to try on Panel 8. Circuit breakers DOCK and PROBE, two of them to OPEN. With them both OPEN, attempt the docking, using plus-X for 5 seconds after contact. If you get a capture, on Panel 8, the MAIN Alpha circuit breaker, CLOSE. If no barber pole, try minus-X for 2 seconds. If that confirms that you are captured, hard dock, using system Alpha. You still with me so far?

CDR Yep.

CC Okay. Then if that releases -

CDR Wait - Wait

SPT This is Joe. When we open the circuit breakers, what position should the EXTEND RELEASE switch be in. I assume it should be in RETRACT. I want to make sure that sequence is right.

CC Stand by. That's affirmative, Joe, retract is the proper position.

SPT Okay, it's in RETRACT, no wait, it was in OFF, we just put it to RETRACT, with the breakers OPEN.

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Time: 21:12 CDT 13:12 GMT
5/25/73

Is that acceptable? No, Pete says he just closed them and opened them again, so press on.

CC Okay, we want it in retract and that follow that procedure. Okay, if after that procedure, you release from the workshop, we want you to go back and open the MAIN Alpha circuit breaker. Now we've got both circuit breakers open, and try the same procedure. Attempt docking plus-X 5 seconds after contact. If you get a capture, close the MAIN Bravo circuit breaker, no barber pole, minus-X 2 seconds. If captured, hard dock system Bravo. Got that?

CDR Copy.

CC Okay.

CDR Is it all right for us to give it a go right now. Negative, Pete, we've got a little more talking we'd like to give - to do to you.

CDR Oh, Okay. Go ahead.

CC Okay. In the event that this procedure does not work with all tries, we have really two choices. We can go ahead into a final docking attempt, which involves EVA, or we can work up a procedure so that you can stand off for the night and we'll regroup in the morning. And in the event you want to try the final docking attempt, Rusty's in here, and he wants to read up a few words about how that would be done. We have still 6 minutes left in this pass. Over.

CDR Okay. Let him talk.

MCC Okay, Pete, I'm on Systems 2-1 at Final Docking Attempt under Pyro Cover Removal.

CDR Okay, wait 1.

SPT Go ahead, Rusty.

MCC Okay, just a word on what it is we're doing here. You'll notice down there under "don helmet and gloves", and "suit circuit integrity check," et cetera, that it refers to systems checklist procedures. Those procedures assume a rather basic command module configuration. What we're going to do is redo - just give you the reference here in the SEVA thing that you just did, which are the equivalent, and will save you time.

CDR Go ahead.

MCC Okay, by the way the word just came up that you are cleared to attempt your docking at this time if you want, and you let us know if you want me to read this next three or four lines to you while you're trying that.

SPT Keep going, Rusty.

MCC Okay, Joe. Under "apply anti-fog" Okay? We want to write in "systems prep for depress SEVA L 1-4."

SL-11 MC-55/3

Time: 21:12 CDT 13:12 GRT

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MCC Okay, delete the "apply antifog" for that matter, and have you removed helmets and gloves?

SPT Yes, we have.

MCC Fine, and place under "suit circuit integrity check", scratch "Sl-11", and put in "SEVA L1-6."

SPT Okay.

MCC Okay, next line scratch "systems 1-12" and in place of it "SEVA L1-8."

SPT Okay.

MCC Okay, next page, under "cabin repress," scratch "systems 1-10", put in "SEVA L1-10."

SPT Got you.

MCC Under "doff helmet and gloves" - "SEVA L1-13."

SPT Okay, now stand by.

SPT Houston, Skylab.

MCC Go ahead.

SPT We went with both breakers pulled and contact plus-X for 5 seconds, and we did not close the Main A breaker. Should we close the MAIN A breaker during thrusting?

MCC That's negative.

SPT Okay, I didn't think so, but, we just tried it. It didn't work.

MCC Roger. The answer is that that procedure is not going to work. Stand by 1.

SPT Okay.

MCC Okay, Joe. the final line there. Let me give you that. It's to scratch the next line on 2-2. In other words scratch "command module 02 supply refill" entirely.

SPT Okay.

CDR Okay, Houston, you're telling me that both breakers OUT, no capture, that's it, huh?

MCC That's affirmative. It looks like final docking attempt is next. That's your choice Pete. We'll have a MANEUVER for you over Hawaii if you want to stand off tonight, which means you can wait for about an hour with no activity, or you can attempt final docking. ... Okay the maneuver will not be accomplished until after next Vanguard. That's an hour and a half. We'll get it to you over Hawaii. Maneuver to be accomplished next Vanguard.

CDR Okay, well I guess we might as well go ahead and try the EVA. Because if we ain't docked after that, I think you guys have run out of ideas, haven't you?

MCC Stand by just 1, Pete.

CC CDR, Houston. We have one more attempt that you might try. If you bring descent 2 on the line, you get more voltage, and then go to extend release, and then try a normal docking.

SL-11 MC-55/4

Time: 21:12 CDT 13"12 GET

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SPT Does it matter whether you want it on
main A or main B, Dick?

CC Both of them.

SPT Okay, you want decent 2 on both buses.

CC That's affirm. Be advised we are going
to try to have an ARIA pass in a few minutes, but if we
miss that one, we'll see you at Hawaii at 14:18. Take the
battery off if that procedure does not work.

CDR Wilco.

CC Okay. ...

PAO This is Skylab Control, 13 hours 23
minutes, ground elapsed time. Almost an hour to Hawaii.
Still unsuccessful in redocking with the space station
Skylab 1. At loss of signal over the Vanguard tracking
ship still another procedure was passed up to the crew,
by which they would bring one of the batteries, descent
battery number 2, which is one of the supplemental
power supplies in the service module - will be brought on
both buses, both DC buses to increase the voltage on the
probe extend motor, and perhaps by this means the probe would
be extended to such a position to enhance the probability
of capture. Other possibilities that are being considered
are the earlier mentioned, so-called EVA, in which the
spacecraft could be depressurized and the crewmen in hard
suits, the probe removed, brought down into the cabin and
troubleshoot there. The other alternative would be, since
we are moving pretty much off the range for the night
period for the CSM to stand off for the night and regroup
during the day tomorrow, when we have more continuous tracking
during the earlier part of the day. The orbit is preset
far enough westward now to where we get one, perhaps two,
tracking stations each orbit, or each hour and a half. We
are attempting now to raise the spacecraft through the ARIA.
We'll stand by through this attempt, but it's unlikely that
we will have contact.

CC CDR, Houston. I think I got a response.
How do you read through ARIA? Over.

END OF TAPE

SL-11 MC-36/1

Time: 21:26 p.m. CDT, 13:26 GET

5/25/73

CC CDR, Houston. I think I got a response.
How do you read through ARIA? Over.
CC Skylab, Houston through ARIA VHF, how
do you read?
CDR ...
CC Skylab, Houston. How do you read through
ARIA?
PLT ... helmet and gloves, right?
PLT And I bet you don't want your SEVA.
CDR ...
PLT Here's your other glove, Pete.
SC That's fine.
SPT I can't ... up in the tunnel - -
SC Oh yeah.
PLT I figured Sim Sup would leave us alone.
SC ... I don't think I do.
SC I'll verify that in a second.
SC The probe cover is right there at
the fucking bottom of the ...
SC Oh boy, well - -
SC There that's kind of out of the way.
SC Put your feet down in here.
CC Skylab, Houston through ARIA. Do you
read?
CDR Houston, I read you 3 by 3. We were
still unsuccessful in the other attempts.
CC Roger, Pete. Understand.
CDR You were prompted to do the - the
... back into the probe cover, now. We'll do a little EVA
here in a minute.
CC Roger, Pete. Copy.
CC And Skylab, Houston be advised comm is
extremely poor on this end and we still have about 5 or 6
minutes left in the pass and we're just standing by.
CDR Okay, Houston. We're gonna try and
have this completed one way or another for a SEP maneuver in
about an hour and a half. Is that correct?
CDR Houston, do you read?
CC Skylab, Houston, if you read, the SEP
maneuver time that we've figured out is at a time 15 plus 20.
CDR 15 plus 20. Roger.
CC Roger.
CC I can't - -
CC Oh yeah, I do get it.
SC Now, how about the - -
SC Yeah, okay.
SC Right. There really ... I've got

SL-11 MC-56/2

Time: 21:26 p.m. CDT, 13:26 GET

5/25/73

plenty of - - plenty of length on the hose if I can possibly
... (garble)

SC

All right.

SC

All right. I've got my tool ...

going in across right there. And it's the most thing I need
while - - my ...

SC

Right, Pete?

PLT

Probably best if Paul does again.

SPT

I'm on ...

PLT

Okay. ... Can you figure it

out Paul?

SPT

There you are.

CC

Skylab, Houston. How do you read through

ARIA now?

CC

Skylab, Houston we're still standing

by in the blind from ARIA.

END OF TAPE

SL-II MC-57/1

Time: 21:40 CDT 13:40 GET

5/25/73

PAO This is Skylab Control at 13 hours 40 minutes ground elapsed time. Rather noisy communications through the ARIA aircraft. Some few words came through all that noise. And one comment from the crew was that a wish " I wish sim sup would leave us alone" referring to simulation supervisor, who is sort of a devil's advocate who harrasses the flight controllers and the flight crew during simulations here prelaunch in the Control Center and over in the training building. Right now the current scheme for trying to effect a successful docking is for the crew go hard suit, which they're presently doing donning, redonning the helmets and gloves, depressurizing the command module, removing the forward hatch, hot wiring the retract mechanism with a cable to retract the probe back to a short position. As it is now, it is extended too far, and is acting as a standoff obstruction. Retract the drogue back to the proper length, move in on the docking collar and at which time the 12 latches would trip, and hopefully we would have a hard docking. Should this be unsuccessful, the next remaining scheme is to do a standoff maneuver or separation maneuver at approximately 15 hours 20 minutes ground elapsed time to wait the night when the orbit moves back over more suitable tracking over the states, the Australian stations, the Canary and Madrid stations during the day tomorrow to further trouble shoot the problem. AOS in Hawaii in some 36 minutes. At 13:43, this is Skylab Control.

END OF TAPE

SL-II MC-58/1

Time: 22:02 CDT 14:02 GET

5/25/73

PAO This is Skylab Control at 14 hours 2 minutes ground elapsed time. The Skylab II mission at this time still attempting to redock with the workshop. The procedure being pursued at this time is one in which the spacecraft is depressurized, the forward tunnel hatch removed, the docking probe retracted by hot wiring around a suspected short in which it is assumed the extending motor or the probe motor failed in the on while running. And by retracting the probe, the probability of getting a hard dock is somewhat enhanced. Here in the Control Center, there is a considerable amount of discussion by different groups. Little huddles around the Control Room. Both Flight Directors, Don Puddy and Phil Shaffer are still on duty. Huddled around the spacecraft communicator are Capcom console are Dick Truly who is the active Capcom at the moment, assisted by Rusty Schweigert. Practically all of the Skylab top management is in the room. Skylab Program Director Bill Schneider, Marshall Space Flight Center Program Skylab Program Manager, Leland Belew, Johnson Space Center Skylab Manager Kenneth S. Kleinknecht JSC Director, Chris Craft, Director of Flight Operations at JSC Bill Tendle, Deke Slayton, astronauts Bob Crippen and Bill Thornton, Bruce McCandless others who are hopeful of seeing a successful docking before too long. Spacecraft is presently over mainland China and 15 minutes out of acquisition by Hawaii. At 14:05 ground elapsed time, this is Skylab Control.

END OF TAPE

SL-II MC-59/1

Time: 22:19 p.m. CDT, 14:19 GET

5/25/73

PAO This is Skylab Control, 14 hours 18 minutes ground elapsed time. Slightly over a minute to acquisition through the Hawaii tracking station which appears to be the final Hawaii pass of the evening. Next rev will only have Vanguard and Ascension. We're starting to get VOX through Hawaii from the crew. They're on the VOX mode apparently. We'll stand by for the two-way communications between spacecraft communicator Dick Truly and the crew of Skylab 2.

PLT Oh shit, no. I mean if we get them, great, but we won't get em.

CC Skylab, Houston we're AOS at Hawaii.

CDR Roger, Houston. You - we've done our second EVA and we have gotten probe ... the docking mechanism - we have removed the screw which unfortunately is now in orbit. But we have the probe cover off and the Apollo cover, and we are just reviewing the procedures. For your information, it is extremely hard to ... it's not bright enough for me to get a good alignment, so unless you want me to try this procedure over your station, I was going to wait until nighttime when I have an excellent alignment.

PLT Channel 15 - -

CC Roger, we copy Pete. Stand by.

CC And CDR, Houston. We want you to be lined up as well as you can for the procedures so you can wait til night time to do that if necessary.

CDR Okay, and we are configuring the wiring for that right at this moment.

CC Roger.

CDR And, then what kind of a maneuver are you figuring if we don't manage to get this thing done?

CC Roger, CDR I have 2 pads for you. Essentially what they are is - are 2 maneuvers - 1 posigrade about 5 feet per second and then 1 rev later, a retrograde maneuver of about 5 feet per second. This will give you plenty of separation for the night and a very small TPI burn tomorrow which will end up in a final phase rendezvous that's with lighting and approach angles at nominal. Over.

CDR Okay.

CC And if you'd like to copy the pads down here at Hawaii in the event of an unsuccessful docking attempt, I'll be glad to do it.

PLT I'm doing these goobers again - -

CDR Yeah, and if I can - -

PLT I'm getting it ready for you to read.

CDR Oh. Have you got a book Joe?

SPT No, no, no.

SL-II MC-59/2

Time: 22:19 p.m. CDT, 14:19 GET

5/25/73

CC Pete, it's a G&C checklist page 5-1.
CDR Okay, just a second.
CDR Go ahead, Houston.
CC Roger. First, I'll read you the posi-
grade maneuver down to 33. 0152 00000 plus 0050 plus 4 balls
plus 4 balls 359 240 000 0050 0012 and Delta-V 70 NA. Go ahead.
CDR 01520 4 balls plus 0050 all balls all
balls 359240 all balls 0050 00012.
CC That's affirm. The weight for this
maneuver is 28911 and it's 4 jet plus X on the PSM.
CDR Four jet PSM 2891
CC Roger, and now I have the second the
retrograde maneuver if you're ready to copy.
CDR Go ahead.
CC 016 53 1800 minus 0050 plus 4 balls
plus 4 balls 182 060 000 0050 0012 go ahead.
CDR 165318 00 minus 0050 plus all balls
plus all balls 182 060 000 0050 0012.
CC Roger, Pete. The weight for this one
is 28894 again it's 4 jet plus X PSM and for your information
tomorrow the TPI will be at approximately - a time of approxi-
metely 28 plus 08. The Delta-V will be about 7 feet per second.
This will allow transfer angle of about 300 degrees which will
be a long time from TPI to the mid-courses. The breaking
Delta-V's will be about 7 feet per second and the final phase
of the rendezvous will be nominal. Over.
CDR Got it. 28 plus 08 Delta-V that's 7
feet 300 degree transfer 7 foot per second breaking with a
nominal final phase.
CC Okay, real good Pete. She's still got
4-1/2 minutes before LOS at Hawaii and be advised we're about
13 minutes until sunset.
CDR Okay, what's our next station?
CC Next station is Vanguard and stand by
for a time.
CC Skylab, Houston requests cabin read
press valve to off. The cabin is nominal.
CDR You're 30 seconds late. We just turned
it off.
CC (Laughter) Roger. You're ahead.
CC And CDR, Houston the time at the Van-
guard is 14 plus 52. We've looked at the bird and you are
GO when you get into darkness so when you like, attempt a
docking. You've got about 11 minutes left to sunset.
CDR Okay, I can see a final line much better
at night. The ... is just not bright enough against the
FDA to get at it. Good attitude, so, surprisingly enough the

SL-II MC-59/3

Time: 22:19 p.m. CDT, 14:19 GET

5/25/73

spotlight is excellent and we've had no problem whatsoever with night station-keeping.

CC

Roger, Pete. I understand.

CDR

And are you maneuvering the Bird by

any chance?

CC

Stand by 1.

CC

Negative. We're not.

CDR

Okay ... Houston. Are you there?

CC

Affirm Pete. We're still here for

45 seconds and then we'll see you at Vanguard at 52 go ahead.

CDR

Which box is B box? We've - I believe

it's the upper box or the lower box?

CC

Stand by.

CC

Skylab, Houston. The lower box is system

B box.

CDR

Lower box is B box. Roger.

CC

Roger.

PAO

This is Skylab Control. Spacecraft

Commander aboard Skylab 2, Pete Conrad voiced a preference for attempting the latest docking maneuver after he passes into darkness. He says that the visibility with the spotlight and with the docking aids on the docking adapter are really better on the nightside than they are on the day side of the orbit. The cabin pressure is risen back to a normal pressure, approximately 5 pounds. The crew had removed the forward hatch, hotwired the probe to retract it and will attempt docking shortly after passing into the night side in about 6 minutes from now over the Vanguard station. In 18 minutes we should hear a report from the crew on how well that went. This particular revolution, the Vanguard is the only station that will have the spacecraft. We cross Vanguard in approximately 18 minutes and then again in an hour and 56 minutes. We'll be moving on the backside of the range. We'll come up again with the progress of the most recent docking attempt by Skylab 2, the hard-dock with the Skylab space station in approximately 7 minutes over the tracking ship Vanguard. At 14:33 ground elapsed time, this is Skylab Control.

END OF TAPE

HARD DOCK

SL-II MC-60/1

Time: 22:50 CDT 14:50 GET

5/25/73

PAO This is Skylab Control at 14 hours 50 minutes ground elapsed time. About a minute 50 seconds until acquisition at the Vanguard tracking ship, which is stationed off the southeast coast of South America. And hopefully we will have a positive statement from the crew that they have been successful in docking after the last procedure that they went through. Failing that, it looks like they go through a standoff maneuver for the evening, and regroup tomorrow for further docking attempts. We'll wait and see what happens here over Vanguard. The Vanguard pass will last almost 8 minutes and the next station after Vanguard will be Vanguard again, an hour and 38 minutes from now. We'll stand by for the first call from space-craft communicator to the crew of Skylab II. We've had AOS.

CC Skylab Houston through the Vanguard.
How do you read?

CDR We got a hard dock out of it!

CC Way to go.

PAO Considerable applause here on the report of hard docking.

CDR ... we got a tunnel integrity check in the work right now.

CC Hey, way to go. Good show.

CDR You can tell sir sup that we really would sure like to get some ... out of this thing after a while.

CC You can bet your life I will Pete.

CDR We're starting our quiescent switch configuration with the notes that you gave me some where back day before yesterday it seems like.

CC Stand by for one on the quiescent check please, Pete.

CC CDR Houston. We've got 6 minutes left in this pass. We do have about an hour and a half a whole rev before we get Vanguard back again. I do have just a few short notes that might help you go through the checklist for the post docking this evening. Over.

CDR Fire away.

CC Okay, the first of course is get through the post docking work. And I'm not sure what of this you've done on the SEVA checklist on page L/Delta. Then go through the helmets gloves and PGA docking and stowage and that is on pages L/1-13, L/1-14 and 15 in the SEVA section.

CDR Okay.

SL-II MC-60/2

Time: 22:50 CDT 14:50 GET

5/25/73

CC Okay, following that Pete, go through the presleep activity on SEVA section page L/Foxtrot. And we want to add one additional step in the presleep activity. We need to replace system Alfa LI0H canister, it's in Alfa 4 and stow the used canister back in Alfa 4. Over.

CDR Okay. System A is the top system, right?

CC That's affirmative Pete.

CDR Okay, look we've had our problems and you've had your problems so we'll probably press on to get this thing completely configured according to the checklist that you gave us. We have eaten dinner, so whenever we get this thing done, we'll get to bed and press on first thing in the morning. I would, because of the docking like to go ahead, if we've got a good tunnel and verify all latches. It sounded to me like we got at least 10. But I would like to verify them and then we'll put the hatch back in and go to bed. Do you concur with it?

CC Stand by one.

CC Okay, you tell them you got anything else other than that you want to do tonight? Well he does that as far as the list.

CC CDR Houston. On your question, we do concur that if you have a good hatch integrity check to verify the docking latches. Also one thing we want to be sure to catch is a fuel cell reactants valves to unlatch in a normal. And be advised that we will be going back to CMG control on the SWS. We expect you may get a little bit of movement out of it but we want to get out of TACS only.

CDR Okay sir it is all yours.

CC Roger that.

CC Skylab Houston.

CDR Go ahead Houston.

CC Okay, Pete. One thing in the checklist that we were going to read you and just never had time and got in a hassle. During the quiescent panel check on panel 201, we do not want to inhibit items 9 Alfa Charlie and Delta. Over.

CDR Do not inhibit 9 Alfa Charlie and Delta.

CC That's right Pete. And where we're looking at our time line, we expect bed time will be some where around 18 hours or a little bit sooner and we think that ought to give us plenty of time to call you on this next Vanguard pass next time around, which is about an hour and a half from now, and if you don't have any objec-

SL 11 MC-60/3
Time: 22:50 CDT 14:50 GMT
5/25/73

tions we're going to call you at that pass and that will probably be the last AOS today.

CDR Yes sir, we'll see how much we can get done in the next hour and a half.

CC Okay real fine. We're about 30 seconds from LOS now and we'll see you at Vanguard next time around.

CDR Okay, sure glad we practiced those procedures on that robe.

CC Yes sir, looking good.

PAO This is Skylab Control at 15 hours ground elapsed time. We've had loss of signal out of the Vanguard tracking station. It's unlikely we will continue to pick up communications through the ARIA aircraft out east of Vanguard. The attempt at docking, hard docking was indeed successful. The crew believes that 10 of the 12 main latches did fire. They're proceeding with the tunnel pressure integrity check and going through their presleep checklist. There will be one more call in an hour and 30 minutes from now over Vanguard again. Then the crew will go to bed, and proceed with the days work tomorrow. Or going into the workshop and deploying the parasol thermal shield. At 15 hours 2 minutes ground elapsed time, this is Skylab Control.

END OF TAPE

SL-11 MC-61/1

Time: 23:27 CDT

15:26 GET

5/25/73

PAO

This is Skylab Control 15 hours 26 minutes ground elapse time in the Skylab 2 mission. The Skylab space station, with a successfully docked Command Service Module is presently over the Arabian Peninsula, and an hour and 3 minutes out of Vanguard for the final communications of the evening, which will consist primarily of a status report on the presleep checklist and the final goodnight of the evening. In 10 or 15 minutes, a press conference will be held in the Johnson Space Center news room, small briefing room. Participants being, Mr. Bill Schneider, Skylab Program Director, NASA headquarters, The two Manned Space Flight Center Skylab Program Managers, Kenny Kleinknecht from Johnson Space Center, and Leland Belew from Marshall Space Flight Center. They should be arriving within the next 10 minutes, and at 15:27 ground elapsed time, this is Skylab Control.

END OF TAPE

SL-II MC-62/1

Time: 00:27 a.m. CDT, 16:27 GET

5/26/73

PAO This is Skylab Control at 5 hours 27 minutes 54 seconds Greenwich mean time. We can hear the horn buzzing in Mission Control to announce acquisition of signal coming up in a little under 2 minutes. We'll have acquisition of signal at Vanguard. This period of pass is approximately 10 minutes and 17 seconds, and after that there will be another opportunity at Ascension at approximately 3 minutes later. At this time it appears that we'll not use that opportunity, that they'll allow the crew to go to sleep immediately after the Vanguard pass. That's still open however, at this time. Among the instructions we passed up - in this coming pass by the CAP COM are instructions to reset the clock that they're using now - the G.E.T. or ground elapsed time clock which will be reading 17:00 hours on the next even hour. They will reset that clock to read 06:00 Greenwich mean time and from now on the mission will be conducted on Greenwich mean time. They also will give instructions to the crew to go to sleep within the next hour before 17:00 GET or 6 o'clock Greenwich mean time and their wake-up will be left open. They can wake up whenever they like. At any case they expect to wake up no earlier than 9 a.m. central daylight time. There will not be a wake-up call given from the ground if present plans are continued. There are two reset maneuvers being scheduled during the night and the crew will be informed about this. The first reset maneuver may take place right immediately after the Vanguard pass at Ascension. That still is - has not been computed completely and they're going to try and compute that in time and let the crew know what - the exact details that reset maneuver will be. We're going to have acquisition of signal very shortly and you can listen in for the - - This is Skylab Control.

CC Skylab, Houston. We're AOS over Vanguard for the next 11 minutes.

PAO We have AOS.

CC 10 minutes for the next 10 minutes.

CC Skylab, Houston. We're AOS over Vanguard for the next 9 minutes. How do you read?

PAO We're trying to acquire the CSM on voice.

CC Skylab, Houston. We're AOS over Vanguard for the next 8 minutes. Over.

CC Skylab, Houston over Vanguard for the next 7 minutes. How do you read? Over.

CDR ...

CC Roger, Pete. You were a little bit garbled there. For your information I've got a few messages for you I'd like to give if you can copy.

PLT Okay, Houston.

CC Roger. Fine job today, Pete. Number 1

SL-II MC-62/2

Time: 00:27 a.m. CDT. 16:27 GET

5/26/73

I guess --

PLT

Okay, this is Paul, ready to copy.

CC

Number one, I guess we'd like to get over for G.m.t. so your checklist tomorrow will give you some good AOS times. We'd like you to set 17:00 GET, or BET rather, to set time at 06:00 G.m.t.

CC

Did you copy, Paul?

CC

Skylab, Houston. How do you read?

CC

Skylab, Houston. How do you read?

PLT

Loud and clear now.

CC

Okey doke, we lost you there for awhile.

Did you get the time set at 17:00 BET time will be 06:00 G.m.t.?

PLT

No, we didn't get any of your messages at all, Bob. As soon as you said you had messages for us, you quit.

CC

Okay. Let's try it again. We would like to give you - set your timer so you can go back to G.m.t. and at 17:00 elapsed time the time will be 06:00 G.m.t.

PLT

Okay.

CC

Okey dokey. And we would also like if you got time meal status for day 1.

CC

Okay. We would also like to insure that VHF A and B are OFF before going to sleep.

PLT

Okay, we had them OFF and then I noticed that I had a barber pole in a power amplifier. And I'm still not sure what games that those guys can play with it down there so we left B DUPLEX UP just to make sure he wouldn't be able to get ahold of it. That's why it's ON now.

CC

Okay. Okay, we're taking care of that. You can turn VHF A and B OFF.

CDR

Okay, Bob, and for your information the CDR ate everything.

CC

All right. Okey doke, Roger.

PLT

The PLT dipped the first spoonful of his asparagus was half wood, so I only ate about one-third of it, mostly the non-woody part.

CC

Rog.

PLT

The SPT said he ate everything. I'm going to have eaten everything else, Bob.

CC

Okay, very good. Thank you, Paul.

CDR

Okay. We have the LiOH canister changed out. We've done the quiescent switch checklist. We got a couple of questions for you. What mode would you like to leave the computer in - you want to leave it in POC and ACCEPT? And while you're answering that one - let me - we had one on whether we're supposed to use this max power down. Do you want that or not?

SL-II MC-62/3

Time: 00:27 a.m. CDT, 16:27 CET

5/26/73

CC Stand by 1. We do want the computer left in P00 and ACCEPT.

CDT Okay, the computer's in P00 and ACCEPT - and on the max power down we've stopped most of that, but there are a couple of things that we have not done. Like, do you want the E/P spectrometer off?

CC Okay, Pete. They really didn't want you to do the max power down, but ...

PLT RCS quad Bravo temperature indicates off-scale high, associated CAUTION. At first we didn't know if it was real or not. We ... 2 - turned those heaters off on Bravo and I assume that it's safe to turn them back on again.

CC Rog. I didn't get the which C&W you had there, Paul.

PLT RCS quad Bravo.

CC Rog.

PLT And the reason we got - the reason we got it was for temperature - that it was high at the time and now it's off-scale high.

CC Rog. Copy.

CC We would like to - -

PLT Go ahead.

CC Okay. We had not planned to give you a call over the ground station, however there's several messages here that we probably ought to talk about. So we are about a minute and one half to LOS and we'll have you again at Ascension and at 16:43. I'll go ahead and hit you with a couple of things here. They would like you to back out of that MAX POWER DOWN if you could and just have the quiescent POWER DOWN.

PLT Okay. I think we can sort that out.

CC Okay dokey.

PLT Yeah, also, I got a popped circuit breaker I want to talk about next time on panel 5. It's last one in the second row. UTILITY. We're R/L station MAIN A.

CC Rog. I understand that one's popped.

CDR Well, we reset it but that's the one that feeds the backup way that we got docked and we think it probably popped when we docked.

CC Okay, but it did reset okay. Is that correct?

PLT Yeah.

CC Can you tell us whether you used A or B system for docking?

CDR Bravo.

CC Rog. Copy, Bravo.

CDR The bottom one in the panel I believe.

SL-11 MC-62/4

Time: 00:27 a.m. CDT, 16:27 GMT
5/26/73

CC Rog. Okay, we're just about to go LOS here. By the way wake-up tomorrow is going to be open-ended. You give us a call.

MS Yea.

CDR Okay, that's good because look we got another hour at least in here. Man, this place looks like somebody blew through here with a tornado.

CC I think you guys earned a good night's sleep.

CDR We'll be around for at least another hour and a half I think.

CC Rog. We were going to end up doing a CMG reset at the next station pass and that's going to move the vehicle around a little bit.

CDR Well we notice ... up here a little bit.

CC Okay, you have got a slight maneuver going on now, but that's not a reset. We're trying to get back ...

PAO We have LOS. We've have our next acquisition of signal in about 2 minutes and 17 seconds and the crew will be again given further information about maneuvers. We'll be on for about 2 minutes.

END OF TAPE

SL-11 MC-67/1

Time: 00:43 CDT 16:43 GET

5/25/73

CC We have acquisition of telemetry data and we expect acquisition any moment now.

CC We are AOS over Ascension for the 10 minutes for the next 10 minutes.

PLT Okay, we are backing out of this low power thing.

CC Rog, understand. And I guess you got your flight plan there with you and it did have exceptions listed on the quiescent time line. That's in your SEVA checklist.

CDR - - too but he also had the max power down and I wasn't sure which one you wanted, so I went into that and we'll be out in a minute.

CC Roger, understand.

CC Rog, the exceptions are listed in SEVA L-E.

CDR Right.

CC And we are going to be starting the CMG reset routine very soon, and it's going to cause the vehicle to move around, oh a good little bit. This one is going to be kind of small, it can't be large. For your information, we are probably going to have to do another one of these tonight before you wake up. We've been having to do them about every 4 to 8 hours.

CDR Okay.

CC And Skylab, we would like you to select secondary package heaters on quad Bravo.

CDR Okay, everything works.

PLT Well we've got the package heater and we've got the quad heater. Do you want them both to go to 2 and secondary as appropriate?

CC Pete, that was a little bit garbled on did you understand it on quad Bravo. We wanted the package heaters to secondary.

CDR Okay, the package heaters to secondary.

CC Rog.

PLT Okay except that's what's confusing, Crip. We got two sets of heaters. One for the package and one for the quad.

CC Rog. It is the package.

PLT Well the backup one for the package is two and the backup one for the quad is recon. So you want the package heater to 2 and the quad heater left in primary. Is that right?

CC That is affirmative.

CDR Okay, and by going to the caution warning, it was a package indication that was tripping it.

CC Rog, understand.

SL-11 MC-63/2

Time: 00:43 CDT 16:43 GMT

5/25/73

CDR Say, Crip, we did have to dump urine once today, which I believe we reported. The time that we did it all three crew members other wise we have collected all the rest of it onboard.

CC

Roger, copy.

CC

Skylab Houston. We still have about 6 minutes left in this pass. The next pass is going to be over Guam at 17:27 elapsed time and that will 06:27. I guess our intent now is not to give you a call there.

CDR

Okay.

CC

Skylab Houston. I guess tomorrow morning, what you can do is on your activation checklist pick out a site to give us a call when you're awake and want to go to work.

CDR

Okay.

CC

Skylab Houston. We're 1 minute to LOS over Ascension and we'll see you manana. That pass over Guam, in case you need us is at 06:27 GMT.

CDR

06:27, Okay, thank you.

PAO

This is Skylab Control. We have loss of signal now at Ascension. The spacecraft is now passing to the northeast over Africa on rev 167. Our next chance for signal will be, as the Capcom indicated, in about 33 minutes and 40 seconds from now at Guam. And we expect to have no communications from the spacecraft at that time unless the crew has something they would like to say to the ground. They did indicate at Vanguard that they did not expect to be asleep by 1:00 a.m. central daylight time as they were to be instructed to go to sleep. They may be up a little later, you may hear from them at Guam. We're not quite certain about that. They are expecting to go to bed as soon as possible and will get up probably get up no earlier than 9:00 a.m. central daylight time tomorrow. They will not be awakened from the ground. They will give a call to the ground from their headsets whenever they are ready to get up and go to work. This is about an hour and a half, the 9:00 a.m. minimum sleep time will make it about an hour and a half later than the flight plan that was set up premission. That's to give them time to get plenty of rest after a very hard day. This is Skylab Control at 5 hours 54 minutes and 50 seconds Greenwich mean time.

END OF TAPE

SL-11 MC 64/1

Time: 01:25 CDT 17:25 GET

5/25/73

PAO This is Skylab Control. We again have the horn sounding in Mission Control, 2 minutes coming up for opportunity for acquisition of signal at Guam. The space station at this time is on its 167th revolution on a decending node, passing over Japan. And we're about 1-1/2 minutes from acquisition of signal. This acquisition of signal may not actually indicate any sort of discussion between the crew and ground. We don't know one way or the other whether the crew will still be awake. We will, however, be getting telemetry data. And we may hear something from the crew, since they indicated they may not yet be asleep. We have 1 minute and 20 seconds to acquisition of signal.

PAO Skylab Control. We have 55 seconds to acquisition of signal. The crew is now operating on Greenwich mean time. They have reset their clocks at 1700 hours ground elapsed time to the Greenwich mean time 600 hours. They are now going to be getting all times in Greenwich mean time. At 06:26:49 Greenwich mean time, we have 38 seconds to acquisition of signal.

PAO We have telemetry acquisition of signal. And we should have voice acquisition of signal shortly.

PAO AOS.
MCC Guam tech. Comm Tech, Houston, take net one for a voice check.

MCC Guam, Comm Tech
MCC Roger.

PAO We have indications that the crew is attempting -

MCC Guam station, do you read. Over.
CDR Affirmative Guam. loud and clear.
MCC We have a communications problem between the tracking station and the network, and we'll be back with you as soon as we reestablish.

CC Skylab, Houston. How do you read.
CDR Loud and Clear.
CC Okay. Read you loud and clear.
CDR Hey, we finished chlorinating the water.

P.J. Weitz is sliding into his sleeping bag, along with Pete Conrad and Joe Kerwin. We're just about to bed out.

CC Very good. Anything else we can do for you tonight?

CDR No. We did have a question. We have turned the potable water tank on not for any other reason than it was down to 25 percent. We figure we might as well fill it up.

CC Rog.

SL-11 MC-64/3

Time: 01:25 CDT 17:25 GET

5/25/73

has now risen to 36.8 degrees. Very mild temperature. Very well above freezing, and very well above the safe range that had been indicated earlier, and the temperatures seem to be about the same level that they were earlier in the workshop habitation area. So, we don't expect to hear anything more from the crew tonight. We will have a Skylab reports on the hour from now on, and in the event of any sort of status change, we will come on. This is Skylab Control at 6 hours 39 minutes Greenwich mean time.

END OF TAPE

SL-II MC-65/1

Time: 03:00 CDT 19:00 GET
5/25/73

PAO

This is Skylab Control at 8 hours and 2 seconds Greenwich mean time. At the present time, the Skylab space station is in its 168th revolution. The command module is completing its 12th revolution. They are properly docked. The period of revolution is 1 hour 33 minutes 13.5 seconds. The low point in the orbit 235.2 nautical miles. The high point 239.7 nautical miles. That's a variation from approximately 270 statute miles to 275 statute miles. Speed at this time 25,087.8 feet per second, approximately 17,100 miles per hour. Biomedical officer informs us that we will have no information on the time the crew went to sleep tonight because none of the crew members are wearing the operational biomedical system, the OBS which records heart rate and related data. It allows us to determine whether or not they have gone to sleep. At the present time the command module is a very comfortable 70.6 degrees. And it's pressurized to 4.9 pounds per square inch. This is Skylab Control at 8 hours 1 minute and 17 seconds Greenwich mean time.

END OF TAPE